USER MANUAL FOR
FPU TRANSPORT SYSTEM (FPU-TS)
User and General Purpose
Maintenance Manual

FPU® SERIES	PART NUMBER	NSN
FPU TRANSPORT SYSTEM (FPU-TS) TAN	15002022-T	NOT ASSIGNED
FPU TRANSPORT SYSTEM (FPU-TS) GREEN	15002022-G	NOT ASSIGNED

BOH Environmental, LLC
FPU Mobility Systems Division
4116C Walney Road, Chantilly, VA 20151
Ph: (703) 449-6020 Fax: (703) 449-6022

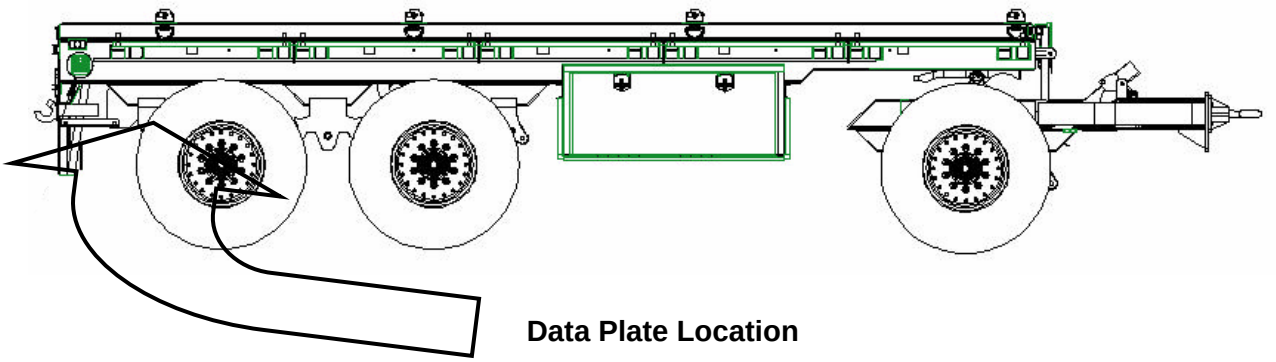
Version 001A, 30 Oct 05

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION I
INTRODUCTION AND GENERAL INFORMATION

BOH DATA PLATES

The FPU TRANSPORT SYSTEM (FPU-TS) provides a 31,000 lb. load capacity.



Data Plate Location

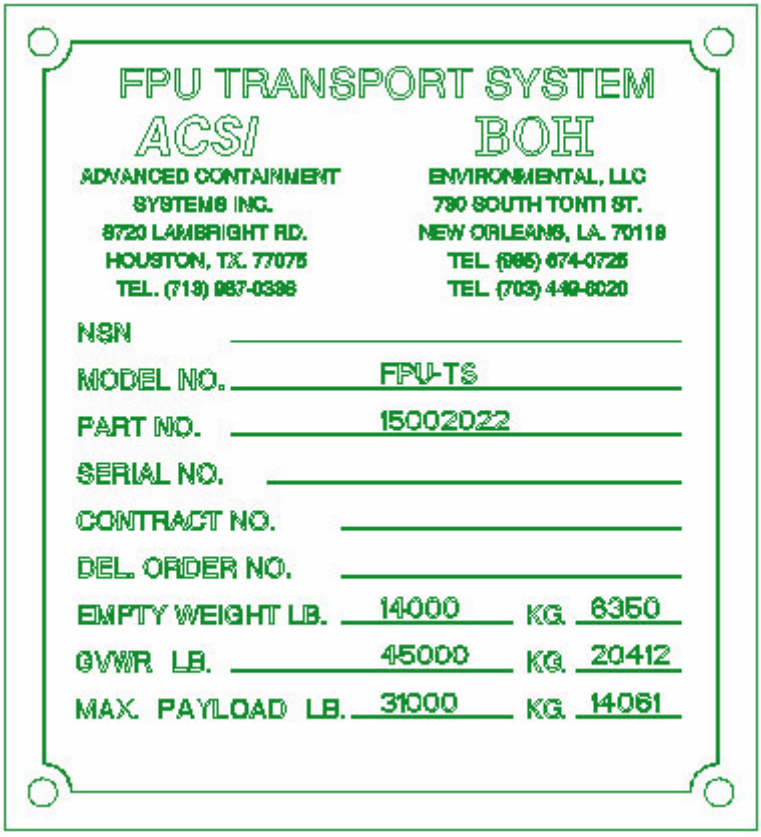


TABLE OF CONTENTS

Section ..... Page

BOH DATA PLATES i
TABLE OF CONTENTS ii
LIST OF ILLUSTRATIONS iii
LIST OF TABLES iii
SAFETY SUMMARY iv
WARNING SUMMARY vi

I. INTRODUCTION AND GENERAL INFORMATION
1.1 Introduction 1
1.2 General Information 1
1.3 Special Tools & Test Equipment 1

II. BOH FPU-TS PRODUCT LINE
2.1 Transport System Load Configurations . 2

III. PREPARATION FOR USE, STORAGE, MOVEMENT AND SHIPMENT
3.1 Preparation for Use 10
3.2 Preparation for Storage 10
3.3 FPU-TS Backing Procedure 10
3.4 Preparation for Movement 11
3.4 Preparation for Shipment 12

IV. TRANSPORT SYSTEM and CONTAINER OPERATIONS
4.1 FPU-TS Setup and Operation Instruction 15
4.2 Site Requirements 15
4.3 Preparing FPU-TS for Shipping/Storage Systems for Use 16
4.4 Transport System Access Ladder 17
4.5 Connecting Bridge Locks for a FPU-8 to BOH-CARGO-6 to FPU-8 Combination of Containers 18

Section ..... Page

4.6 Connecting FPU-8-2 and BOH CARGO 12-1 Combination and Horizontal Inter-Connectors 23
4.7 Deploying the Retractable Platforms ... 25
4.8 The Safety Work Area Border Set-Up . 28
4.9 Pintle and Lunette Eye 30
4.10 Transport System Air Brakes..... 31
4.11 Tires and Wheels..... 32

V. FPU TRANSPORT SYSTEM (FPU-TS) MAINTENANCE GUIDE
5.1 Cleaning, Lubrication and Preventative Maintenance Checks and Services (PMCS) 34
5.2 Minor Repairs 36
5.3 Technical Information and Replacement Part Sources 39
5.4 Troubleshooting..... 40

VI. FPU TRANSPORT SYSTEM (FPU-TS) ELECTRICAL DIAGRAM
6.1 FPU-TS Electrical System 42

VII. FPU TRANSPORT SYSTEM PARTS LIST
7.1 Repair Parts List 43

VIII. FPU TRANSPORT SYSTEM (FPU-TS) WARRANTY
8.1 Warranty 44

LIST OF ILLUSTRATIONS

Figure ..... Page

Figure 2.1-1 Work Area Platforms 2
Figure 2.1-2 Transport System and Load Configuration Connection Locations..... 3
Figure 2.1-3 Transport System Load Location Stencils 4
Figure 2.1-4 Transport System Container Load Position Configurations..... 5
Figure 2.1-5 Transport System FPU-8-2 and the BOH-CARGO-12 Container Load Position.. 6
Figure 2.1-6 FPU-8-2 Load Position 7
Figure 2.1-7 Trailer Top View with Bridge Lock Locations, FPU 8/6/8 Load Position 8
Figure 2.1-8 Bridge Lock Installed 9
Figure 3.3-1 FPU-TS Mechanical Backing Locks and Pins..... 11
Figure 3.5-1 Lock-Down Locations 14
Figure 4.1-1 Air Break Bleeders..... 15
Figure 4.3-1 ISO Twist Locks/Tie-downs (FPU-TS) 17
Figure 4.4-1 Retractable Ladder (FPU-TS)..... 18
Figure 4.5-1 Bridge Lock and Tandem Interlocking Containers..... 20
Figure 4.5-2 Roof Access System 21
Figure 4.5-3 Bridge Lock..... 22

Figure ..... Page

Figure 4.5-4 Bridge Lock Installed..... 23
Figure 4.6-1 Horizontal Inter-Connector 24
Figure 4.6-2 FPU Retractable Steps..... 24
Figure 4.7-1 Retractable Platform Operational Step 1 26
Figure 4.7-2 Retractable Platform Operational Step 2 27
Figure 4.7-3 Retractable Platform Operational Step 3 27
Figure 4.7-4 Retractable Platform Access Ladder Step 4 28
Figure 4.8-1 Safe Work Area Poles and Border Straps Step 5..... 28
Figure 4.8-2 Border Poles and Safety Straps Step 6 30
Figure 4.9-1 Lunette Eye and Tow Pintle 31
Figure 4.9-2 Leveling Jack..... 31
Figure 4.10-1 Air Brake Connections..... 32
Figure 4.11-1 Wheel & Lug Nut Arrangement . 33
Figure 5.2-2 Tail and Running Lights..... 36
Figure 5.2-3 BLUEDOT Air Brake Parts 37
Figure 5.2-4 Air Brake Diagram 41
Figure 6.1-1 FPU-TS Electrical System..... 42

LIST OF TABLES

Table ..... Page

Table 3.5-1 FPU-TS Transported Material Load Specifications..... 12
Table 3.5-2 FPU-TS Container Load Specifications..... 12
Table 3.5-3 Trailer Performance Data 13
Table 5.1-1 Cleaning Procedures 34
Table 5.1-2 Lubrication Procedures..... 35

Table ..... Page

Table 5.1-3 PMCS 35
Table 5.3-1 Technical and Replacement Part Information Sources 39
Table 5.4-1 Troubleshooting Checks..... 40
Table 7.1-1 Repair Parts List FPU-TS..... 43

SAFETY SUMMARY

This warning summary contains general safety precautions and hazardous material warnings that must be understood and applied during operation and maintenance of this equipment. Failure to observe these warnings could result in serious injury or death.

GENERAL WARNINGS

HEAVY PARTS - heavy object on human figure shows that heavy parts present a danger to life or limb.

HEAVY PARTS - heavy object pinning human figure against wall shows that heavy, moving parts present a danger to life or limb.

HEAVY PARTS - hand with heavy object on top shows that heavy parts can crush and harm.

HEAVY PARTS - foot with heavy object on top shows that heavy parts can crush and harm.

SLICK FLOOR - wavy line on floor with legs prone shows that slick floor presents a danger for slipping or falling.

HEAVY OBJECT - human figure stooping over heavy object shows physical injury potential from improper lifting technique.

ELECTRICAL - electrical wire to arm with electricity symbol running through human body shows that shock hazard is present.

ELECTRICAL - electrical wire to hand with electricity symbol running through hand shows that shock hazard is present.

CRYOGENIC - hand in block of ice shows that the material is extremely cold and can injure human skin or tissue.

FIRE - flame shows that a material may ignite and cause burns.

VAPOR - human figure in a cloud shows that material vapors present a danger to life or health.

CHEMICAL - drops of liquid on hand shows that the material will cause burns or irritation to human skin or tissue.

EYE PROTECTION - person with goggles shows that the material will injure the eyes.

WARNING SUMMARY

This warning summary contains general safety warnings and hazardous materials warnings that must be understood and applied during operation and maintenance of this equipment. Failure to observe these precautions could result in serious injury or death to persons using equipment.

WARNING

Do not allow the system to swing if using an overhead lift. Always ensure an appropriate sling is used in the lift. Always use properly sized forklift, crane, or lifting device. Failure to comply could cause injury to personnel or damage to the equipment.

WARNING

Always insure the FPU-TS brake system has been disengaged and the transport system is unable to roll freely prior to, loading the transport system.

Use extreme caution when connecting Field Pack-Up Unit (FPU) containers into a combination system. Forklift support is required. Make sure all container connectors are properly seated and locked securely. Failure to comply could cause serious injury. Failure to follow proper connection procedures may result in damage to the equipment.

Standard forklift principles apply when working with or on the FPU container. When working with ground guides during the loading or unloading of a module, never move the module into the FPU container while the ground guide is between the fork, module, and the FPU container. Serious injury could occur if the ground guide is pinned between the forklift and the FPU container. Forklift operators must maintain visual contact with their ground guides at all times.

Always follow standard forklift procedures. A tilt hazard exists when forklift operators try to lift a partially loaded FPU container from the wrong side. Always lift a container with the heavier side closest to the forklift operator. This places the heavier part of the load back into the tines versus out on the tips. A tilt situation exists when the heaviest part of the load is out on the tips of the tines, on uneven ground, with forks fully extended, and while traveling. Operators should always keep loads low and close to the forklift carriage. Operators should never travel when the load is in the fork's extended position.

WARNING

The FPU containers and their contents are heavy and could cause injury if they fall onto or strike personnel.

WARNING

Fall hazards exist when climbing onto or working from the top of a FPU container during crane lifting operation. Always maintain three points of contact to the ladder and container when climbing onto the container. Never move, step, or walk backwards when working on top of the system. All movement should be in the forward direction. A fall can occur if personnel lose concentration and step backwards off of the edge. Stand erect only if necessary and only away from the edge. Working from a kneeling position helps reduce the threat of a fall.

The FPU containers may be used to store various forms of oils, lubricants, and other potentially slippery substances. Keeping the top-working surface of the FPU transport system clean is important; nevertheless, always move with caution

on top of FPU transport system. Failure to maintain clean work surfaces could cause a slip and injury.

WARNING

The removable platforms are heavy and awkward to handle by a single person. The installation of these items is a two-person operation.

WARNING

Overhead power lines and obstructions can cause serious injury or damage to property. Forklift operators, truck drivers, and ground guides should always clear overhead when loading, unloading, or moving the FPU transport system.

WARNING

To prevent electrical shock hazard, only trained and qualified personnel should attempt to correct electrical discrepancies. Additionally, electrical power must be disconnected before any electrical system work is performed.

WARNING

Protective gloves should be worn when handling metal parts in below freezing temperatures. Failure to wear gloves may result in skin freezing to the metal upon contact and cause tearing of the flesh when attempting to pull away from the metal.

WARNING

Dry cleaning solvent is flammable and cannot be used near an open flame. Use only in well-ventilated places and have a fire extinguisher available. Use of protective clothing as directed in the product MSDS is required. Failure to comply could result in injury to personnel or equipment damage. Do not allow cleaning solvents or compounds to come in contact with door seals, covers, fabric, or rubber components. Damage to these components will occur.

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION I

INTRODUCTION AND GENERAL INFORMATION

SECTION I INTRODUCTION AND GENERAL INFORMATION

1.1 INTRODUCTION

1.1.1 Purpose. This User Manual provides operational, safety and maintenance information for the FPU TRANSPORT SYSTEM (FPU-TS).

1.1.2 Manual Scope. This manual will cover safety, minor repair, suggested service and maintenance, troubleshooting, and provides a parts list with illustrations to help the operating personnel use the system to its full capacity.

1.2 GENERAL INFORMATION

1.2.1 Descriptions. BOH Environmental's Field Pack-Up FPU TRANSPORT SYSTEM (FPU-TS) is a durable, transport system that can be adapted across the spectrum of military Family of Mobile Tactical Vehicles (FMTV) and a wide range of other trucks and towing vehicles.

1.2.2 Containers. The system consists of a FPU TRANSPORT SYSTEM with a flexible ability to secure wide range single FPUs or 20 foot FPU container combinations, i.e. FPU-8-2 and BOH-CARGO-12, FPU-8-2 with a BOH-CARGO-6 and another FPU-8-2 and other BOH containers such as the MWC, CCC, EWCC as well as any 20 foot ISO configured container.

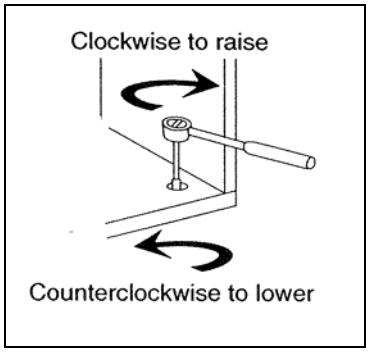
1.2.3 FPU TRANSPORT SYSTEM Benefits. FPU TRANSPORT SYSTEM provides extendable/retractable platforms that when deployed give container operators easy access to the container doors and stored material without removing the containers from the trailer. The FPU-TS allows for fast deployment with very small set-up and takedown time for rapid change in location when needed, with the ability to access a variety of container combinations without removing the containers from the trailer.

1.2.4 FPU TRANSPORT SYSTEM (FPU-TS) Manufacturer's Data Plate. The FPU-TS data plate identifies the manufacturer's part number, serialization, contract and delivery order number and National Stock Number (NSN). The FPU-TS data plates are unique by serial number for the chaise and the front-tow Pintle structure. Further information on the BOH line of products can be found on the BOH web site: www.bohenvironmental.com.

1.3 SPECIAL TOOLS AND TEST EQUIPMENT

1.3.1 Descriptions. A General Mechanics Tool Set (NSN 5180-01-454-3787) is sufficient to perform minor repairs on the containers and modules.

NOTE: All hardware, bolts, jam nuts, and screws are loosened with a counterclockwise rotation. All hardware, bolts, jam nuts, and screws are tightened with a clockwise rotation with the exception of the wheel lug nuts. **Review Section 4.11 TIRES and WHEELS.**



WARNING

Personnel performing electrical repairs and service should be certified electricians and have the proper tools and test equipment.

WARNING

Personnel performing Air Break repairs and service should be certified in basic pneumatics and have the proper tools and test equipment.

www.bohenvironmental.com

Additionally, BOH can be reached at:

BOH Environmental, LLC
FPU Mobility Systems Division
4116C Walney Road, Chantilly, VA 20151
Ph: (703) 449-6020 Fax: (703) 449-6022

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION II
BOH FPU-TS PRODUCT LINE

SECTION II BOH FPU-TS PRODUCT LINE

This section describes the following components:

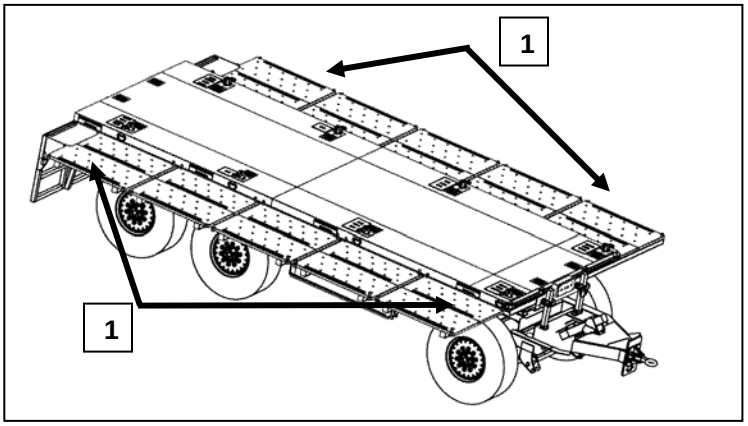
FPU® SERIES	PART NUMBER	NSN
FPU TRANSPORT SYSTEM (FPU-TS) TAN	15002022	NOT ASSIGNED
FPU TRANSPORT SYSTEM (FPU-TS) GREEN	15002022	NOT ASSIGNED

2.1 TRANSPORT SYSTEM AND LOAD CONFIGURATIONS

CAUTION
Review the entire section 4 prior to loading any containers on the FPU-TS.

2.1.1 Description/Certifications. The FPU Transport System provides a 31,000 lb. load capacity, extendable/retractable work area platforms (1) that when deployed give the FPU operators easy access to the container side doors and stored material without removing the containers from the transport trailer. **See Figure 2.1-1.**

Figure 2.1-1
Work Area Platforms



2.1.2 Load configurations. The FPU-TS consists of a FPU Transport System with flexible ability to securely transport a wide range of Field Pack-Up (FPU) Systems i.e. FPU-20-1, FPU-20-2, FPU-8-2 with BOH-CARGO-12, FPU-8-2 with BOH-CARGO-6 and another FPU-8-2 connected and other BOH containers such as the MWC, CCC, EWCC, and DC-12 DECON as well as any 20 foot ISO configured containers. **See Figures 2.1-4, 2.1-5, 2.1-6 and 2.1-7.**

2.1.3 Load stenciling. The floor of the FPU-TS is stenciled at the connection points (1) B thru E for each optional load configuration. **See Figures 2.1-2 and 2.1-3.**

CAUTION

Maintain proper air pressure (written in raised letters on the side wall of the tire) prior to movement or loading of the FPU-TS. Check and inflate with the FPU-TS unloaded. Do not over-inflate.

Figure 2.1-2
Transport System and Load Configuration Connection Locations

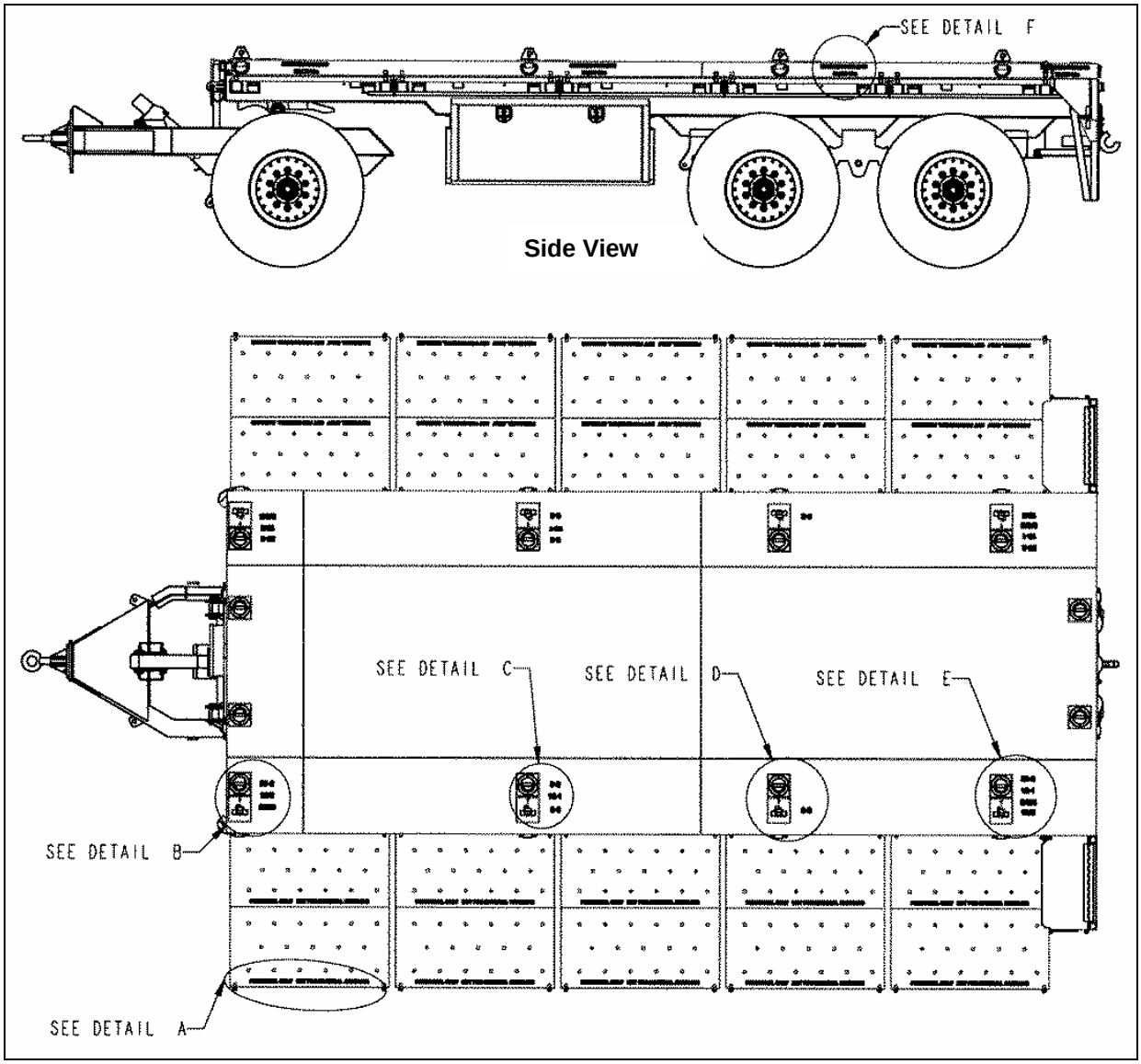
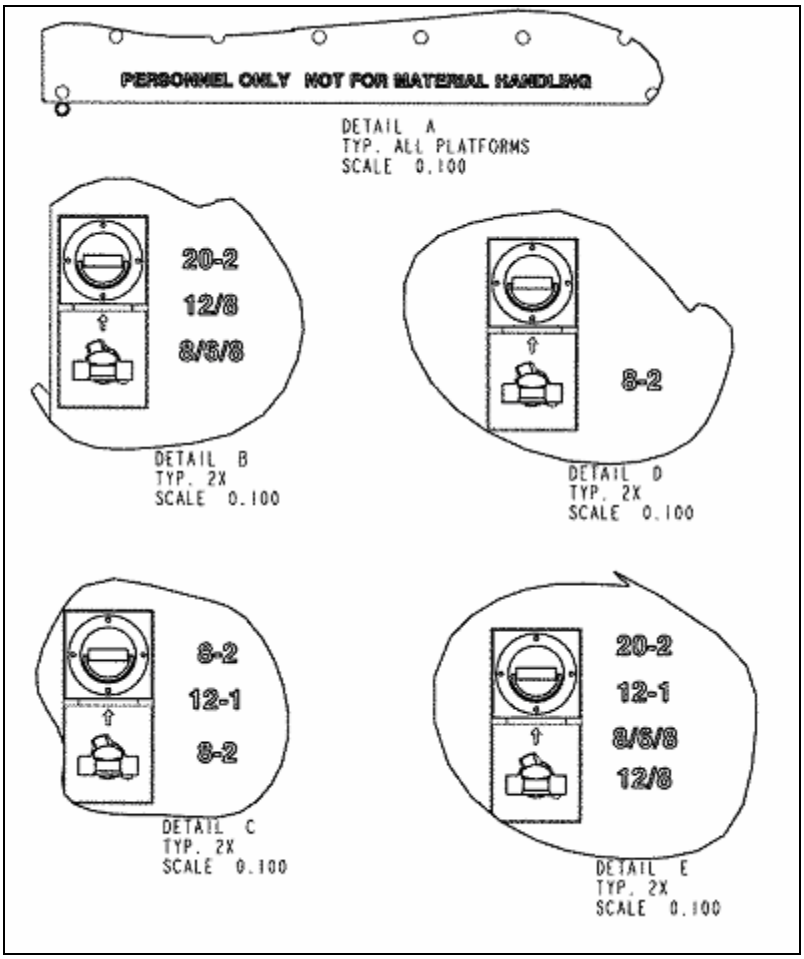


Figure 2.1-3
Transport System Load Location Stencils



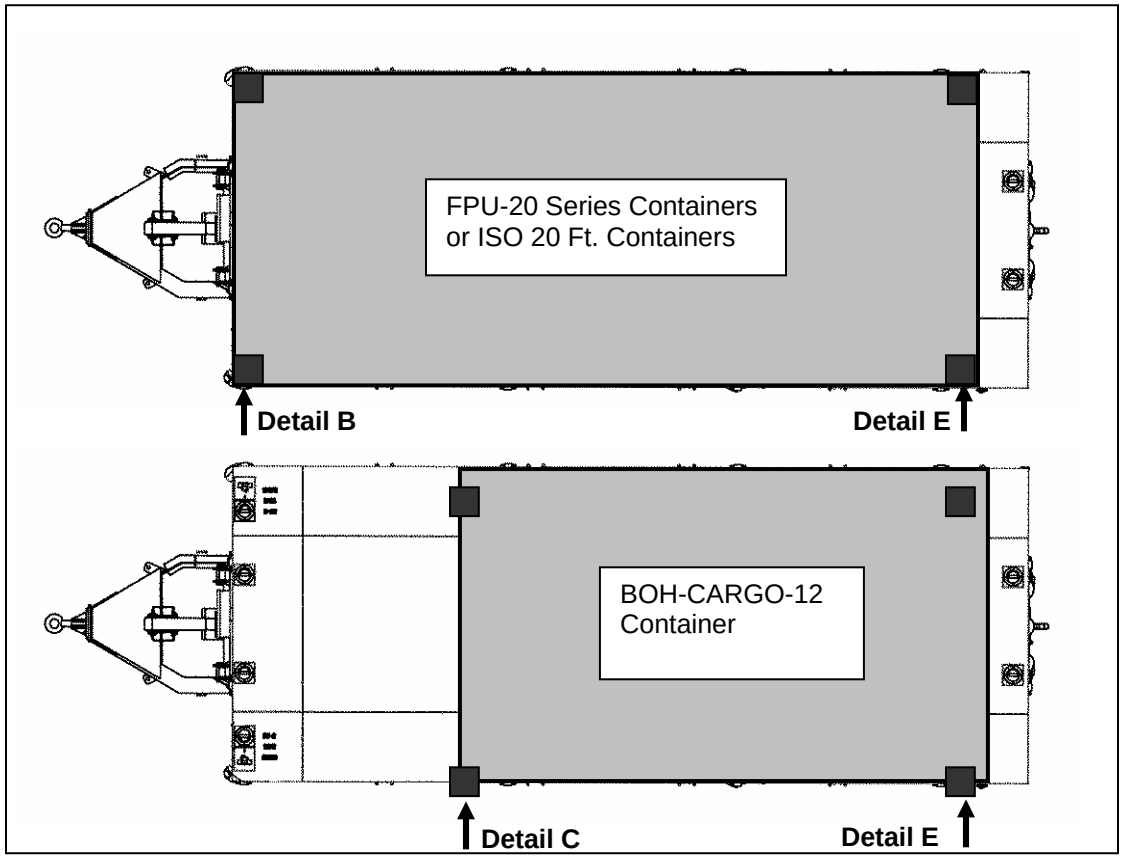
Location Stencils translate as follows:

20-2	**=**	FPU-20, CCC, EWCC, or any 20-foot ISO configured container
12/8	**=**	BOH-CARGO-12 with a FPU-8-2 combination
8-2	**=**	FPU-8-2
8/6/8	**=**	FPU-8-2 with a BOH-CARGO-6 and a FPU-8-2 combination
12-1	**=**	BOH-CARGO-12-1

CAUTION

The FPU-TS has a Maximum load limit of 31,000 lbs. This does not include the work area platforms. Work area platforms are designed to support personnel only and are not designed to support stacked material or material handling equipment.

Figure 2.1-4
Transport System Container Load Position Configurations



Connection of the FPU-8-2 and the BOH-CARGO-12 containers require four ISO Horizontal Inter-Connectors (1). For details review the entire **Section 4** Loading procedures of this manual, specifically ISO Horizontal Inter-Connectors (1) prior to loading or unloading the container combination.

CAUTION

This is an on-the-ground-level operation. Review the BOH FPU Container manual for this operation. **See Fig. 4.5-1.**

Figure 2.1-5
Transport System FPU-8-2 and the BOH-CARGO-12 Container Load Position

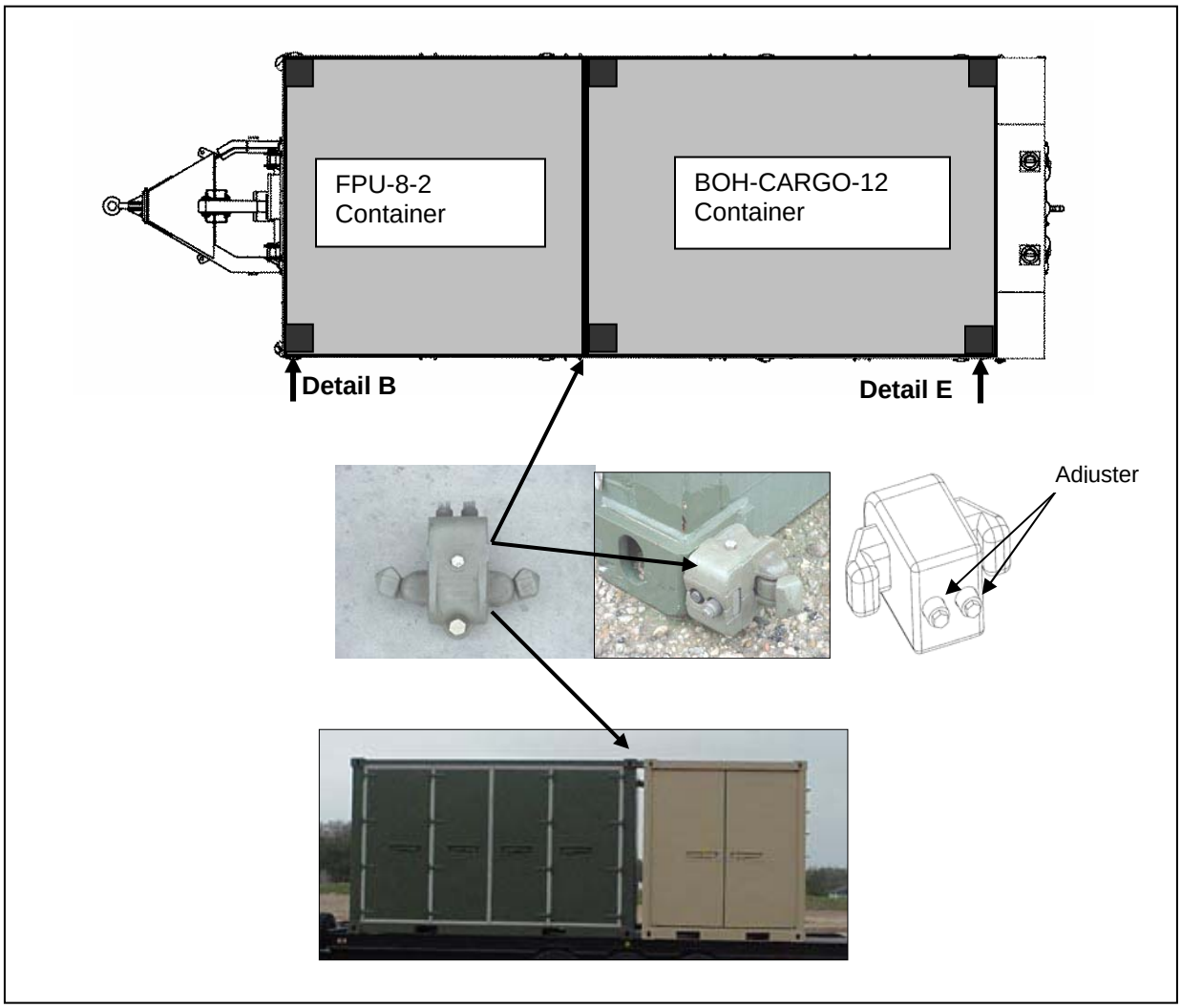
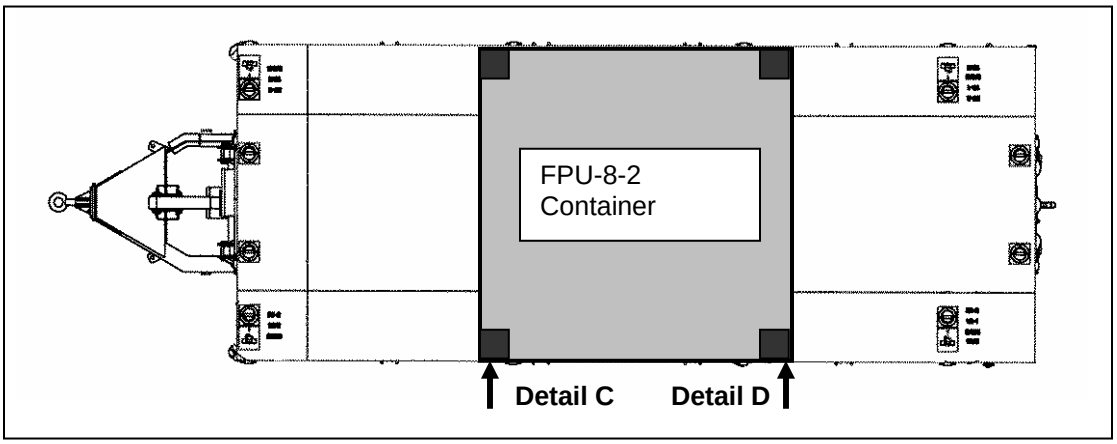


Figure 2.1-6
FPU-8-2 Load Position



CAUTION

The FPU-TS has a maximum load limit of 31,000 lbs. This does not include the work area platforms.
Work area platforms are designed to support personnel only and are not designed to support stacked material or material handling equipment.

2.1.5 The FPU-8-2 with a BOH-CARGO-6 and another FPU-8-2 container combination requires installation of eight Bridge Lock devices (1) to connect the BOH-CARGO-6 container to the FPU-8-2 containers, via the eight top and eight bottom center ISO corner blocks (2). For details review the entire Section 4 Loading procedures prior to installing the four Bridge Locks (1). **See Figure 2.1-7 and 2.1-8**

NOTE: This is an on-the-ground-level operation.

CAUTION

Only Bridge locks (NSN 8145-01-523-4079) are to be used on the FPU 8/6/8 container combination. No Horizontal Inter-Connectors are to be used. Refer to Boh Environmental's USER MANUAL FOR FIELD PACK-UP (FPU®) SYSTEMS & BOH CARGO SYSTEMS.

Figure 2.1-7
Transport System Top View with Bridge Lock Locations
FPU 8/6/8 Load Position See 2.1-2

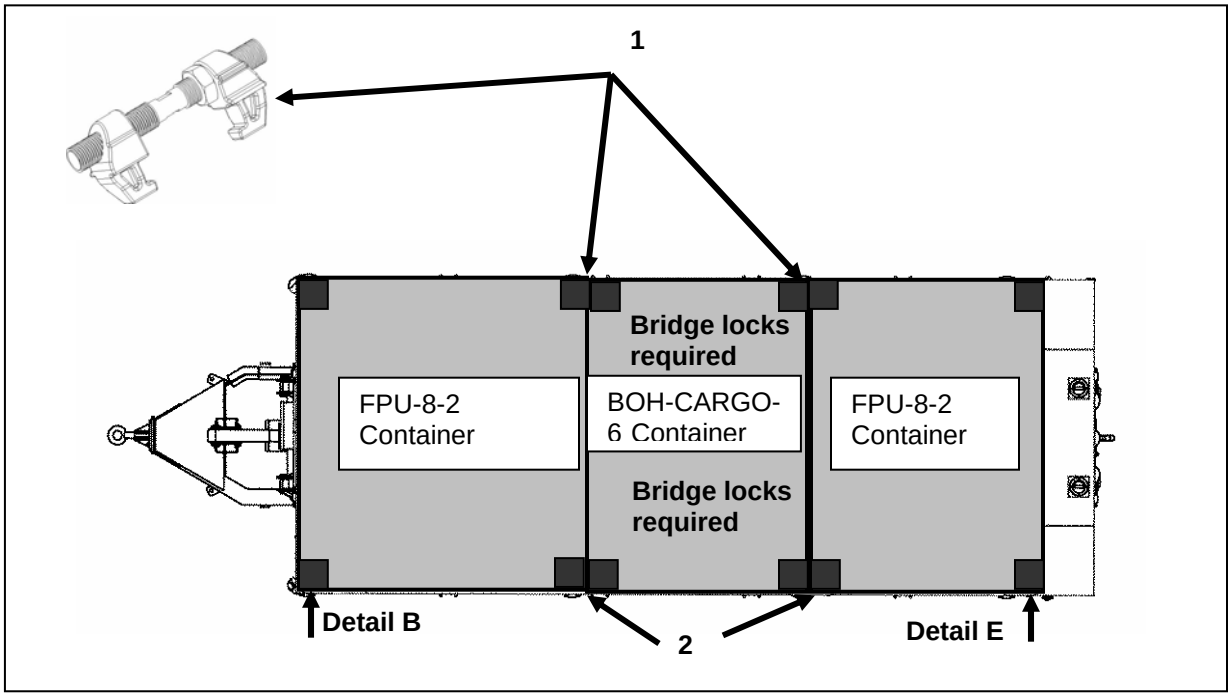
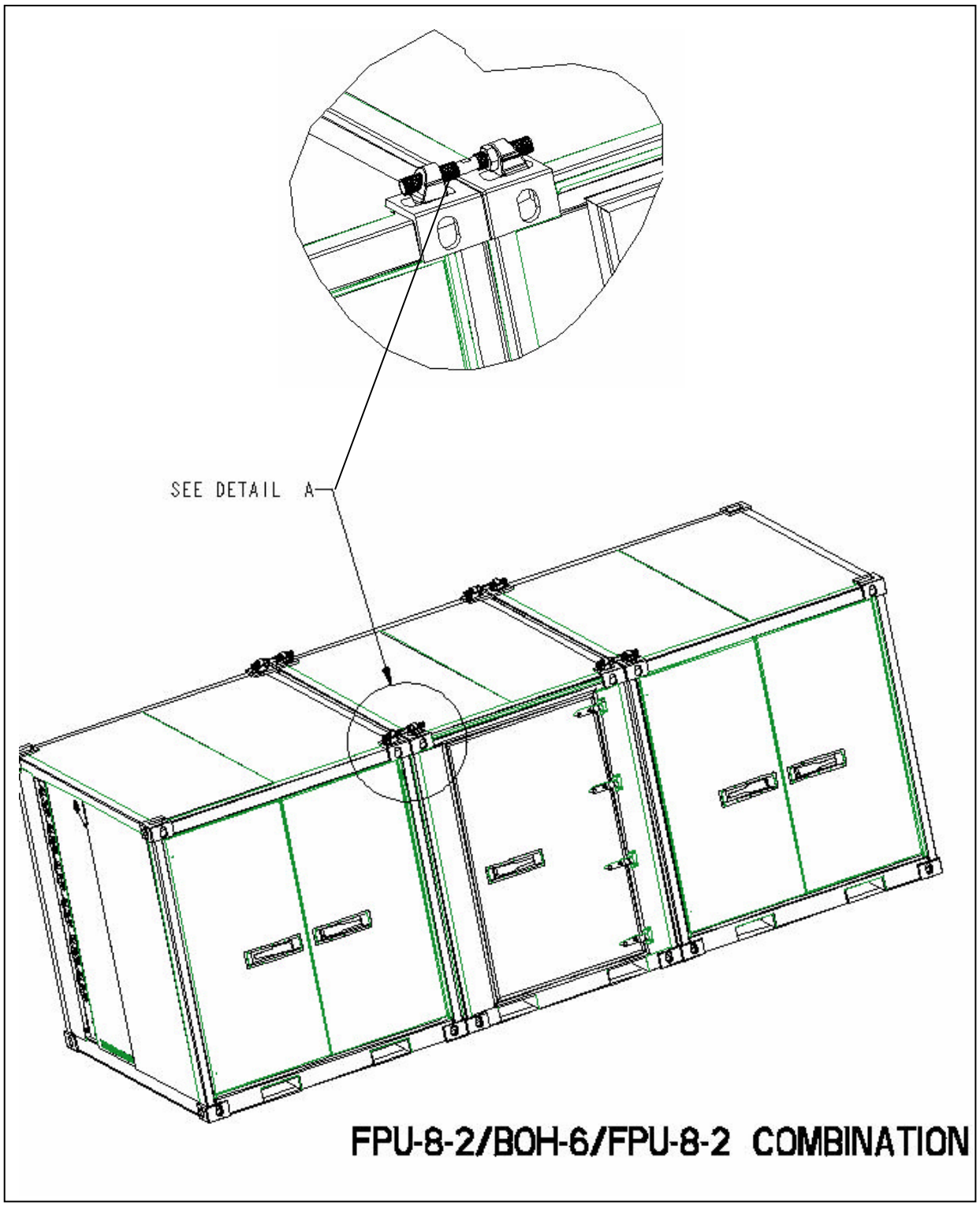


Figure 2.1-8
Bridge Lock Installed



THIS PAGE INTENTIONALLY LEFT BLANK

SECTION III
PREPARATION FOR USE, STORAGE, MOVEMENT AND SHIPMENT

SECTION III
PREPARATION FOR USE, STORAGE, MOVEMENT, AND SHIPMENT

3.1 Preparation for Use

Review the Safety Summary prior to any MHE Movement, Service or Operation of the Containers and Modules (Pages vii and viii).

Relatively level terrain, soil and weather conditions, mud, ice, snow and sand should be considered when selecting a container site to insure the safety of operating personnel.

Refer to FPU Transport System Load Specs and FPU Load Specs **Table 3.5-1.**

3.2 Preparation for Storage

3.2.1 All FPU containers and palletized materials should be removed and general cleaning and inspection should be performed, removing debris that may inhibit operation of platforms, ladder and other locking devices.

3.2.2 All locking devices, platforms and ladder should be swept or wiped clean of debris and inspected to insure they function prior to securing the container. **See Cleaning Table 1, Page 34.**

3.2.3 Lubrication of all moving parts, devices, locks, latches, pins and hinges should be performed. **Note:** Lubrication of the moving parts is recommended prior to long-term storage or shipment. **See Lubrication Table 2, Page 35.**

3.2.4 All retractable platforms, racks, upright poles and ladder should be securely locked in place and secured with pins prior to storing the transport system.

3.3 FPU-TS Backing Procedure

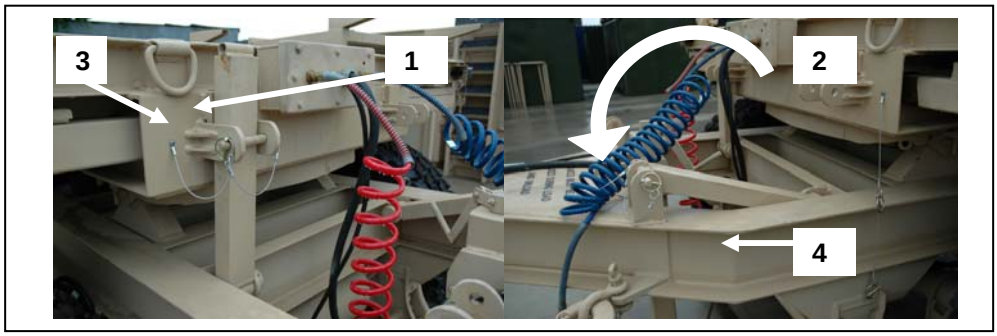
3.3.1 To prevent radical swing and jack-knifing of the transport system during reverse movement, two Backing Locks (1) have been provided to restrain the Pintle carriage (4). **See Fig. 3.3-1.**

3.3.2 Pull forward to align the FPU-TS in the desired position before backing up.

3.3.3 Align the Pintle carriage (4) so that the backing lock bars (3) can be raised to the brackets and pinned in place.

3.3.4 The FPU-TS may now be backed into the desired location.

Figure 3.3-1
FPU-TS Mechanical Backing Locks and Pins



CAUTION

The Transport System Mechanical Backing Locks must be returned to their stowed down position (2) and pinned prior to forward transportation of the system to prevent damage to the lock bars and brackets. Do not attempt to make more than slow, small corrective turns to the FPU-TS in a forward or reverse motion with the locks up in the locked position (3), or damage will occur. See Fig. 3.3-1.

WARNING

Ensure that a ground spotter is directing and in full view when moving the FPU-TS.

3.4 Preparation for Movement

CAUTION

Maintain proper air pressure (written in raised letters on the side wall of the tire) prior to movement or loading of the FPU-TS. Check and inflate with the FPU-TS unloaded. Insure the Backing Lock Bars are in their disengaged position and securely pinned (2) before normal operation. See Fig. 3.3-1.

3.4.1 FPU-TS platforms should be removed and stored and a general cleaning and inspection should be performed, removing debris that may inhibit operation of the ladder, retractable platforms, pins and other locking devices.

3.4.2 All locking devices, pins, ladder and platforms should be swept or wiped clean of debris and inspected to insure they function prior to securing the transport system.
See Cleaning Table 5.1-1.

3.4.3 Transport System equipment, such as retractable platform racks, safety chains, and ladder should be securely locked in place and secured with straps or pins. The removable platforms, safety poles and safety straps should be stored in the stowage compartments prior to moving the transport system.

3.5 Preparation for Shipment

FPU Transport System has a load limit of 31,000 lbs.

Consult the manufacturer's data or data tag for Maximum Gross Weight for each type of container to be loaded onto the FPU-TS. The following **Table 3.5-1** lists various containers that may be loaded on the FPU-TS. Any loaded container may not exceed the 31,000 lb load limitation of the FPU-TS. **See Data Plate**

CAUTION

When transporting any material on the FPU Transport System, that material should be properly tied down and secured. Do not over tighten tie-downs enough to damage any material during transportation.

Table 3.5-1
FPU-TS Transported Material Load Specifications

Nomenclature	Tare Weight	Payload	GVRW
FPU-TS Transport System	14,000 lb	31,000 lb	45,000 lb
Palletized Material	N/A	3,000 lb each position	45,000 lb
Recessed tie-down ring	N/A	6,000 lb each ring	45,000 lb
Side Mounted D-rings	N/A	6,000 lb each ring	45,000 lb

Table 3.5-2
FPU Container Load Specifications

Nomenclature	Tare Weight	Payload Ground	Maximum Capacity
FPU-20-1	12,900 lb	40,000 lb	* 52,900 lb
FPU-20-2	9,800 lb	23,200 lb	* 33,000 lb
FPU-8-2	3,550 lb	14,450 lb	18,000 lb
BOH-Cargo-6	2,200 lb	7,800 lb	10,000 lb
BOH-Cargo-12	5,200 lb	14,800 lb	18,000 lb
CCC	8,480 lb	N/A	N/A
EWCC	11,880 lb	N/A	N/A
MWC	2,900 lb	N/A	2,100 lb

Table 3.5-3
Trailer Performance Data

Maximum Towing Speeds		
Improved Roads	**Unimproved Roads**	**Trails**
45 mph	**35 mph**	**25 mph**

CAUTION

Do not exceed maximum vehicle speed limitations during normal operations. Failure to comply may result in serious injury or death to personnel or damage to equipment.

3.5.1 The FPU-TS is provided with recessed rings (1) for tie-down restraints for palletized material. **See Figure 3.5-1.**

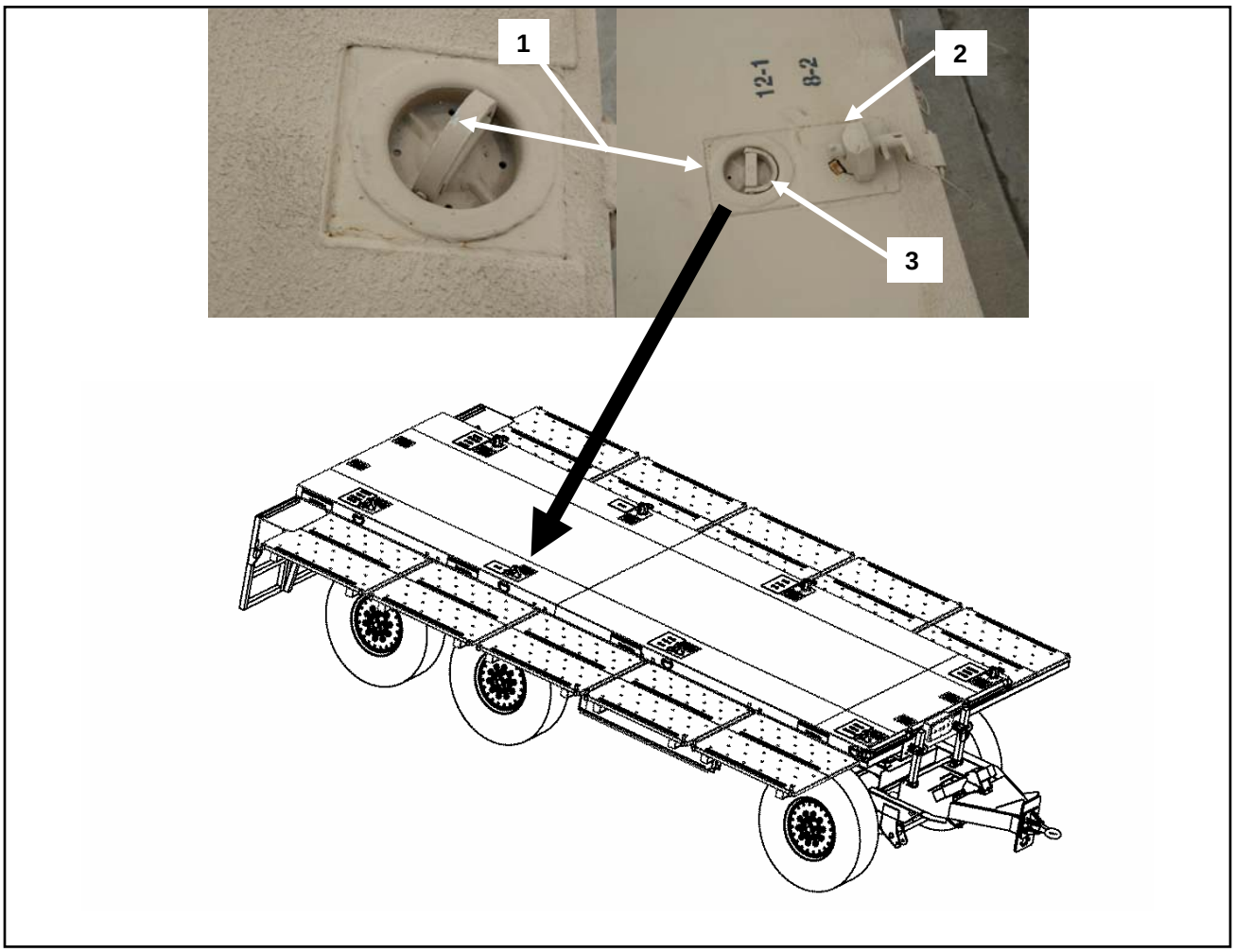
3.5.2 The FPU-TS is provided with positive lock-down devices (2) to secure selected FPU containers with ISO corner blocks.
See Figure 3.5-1. Also review Section 2.1 and Figure 2.1-1 and 2.1-2.

3.5.3 The FPU-TS has stenciled lock-down locations (3) on the floor to indicate where the selected FPU containers are to be locked down.
See Figure 3.5-1. Also review Section 2.1 and Figure 2.1-1 and 2.1-2.

CAUTION

Palletized material secured to the recessed tie-down rings has a working load limit of 3,000 lbs per pallet position.

Figure 3.5-4
Lock-Down Locations



SECTION IV
FPU TRANSPORT SYSTEM (FPU-TS) OPERATIONS

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION IV
FPU TRANSPORT SYSTEM (FPU-TS) OPERATIONS

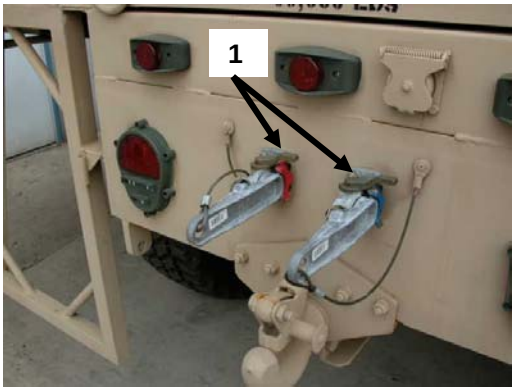
4.1 FPU-TS Setup and Operation Instruction

This section provides step-by-step instructions for the download, set-up and moving of the FPU Transport System. Review the Safety Summary prior to any MHE Movement, Service or Operation of the Transport System and Containers to be loaded on pages iv through vii.

WARNING

Insure that the two air brake bleeders (1) at the end of the transport system are open and air pressure has been expelled to lock the brakes and prevent movement of the transport system during set-up or loading and unloading operations.

Figure 4.1-1
Air Brake Bleeders



4.2 Site Requirements

WARNING

The FPU-TS must be operated on reasonably level ground. Use care when deploying the platforms and access ladder or physical injury may occur. To maintain control during this operation, consider the ground surface conditions for adequate traction, such as mud, snow, ice and sand.

WARNING

During transit movement of any kind or if a FPU container(s) is dropped, contents may have shifted and extreme care should be taken when opening the doors to preclude material from falling on and injuring personnel.

4.3 Preparing FPU-TS for Shipping/Storage Systems for Use

4.3.1 FPU Transport Shipping/Storage Systems are designed for loaded container side door access operation. Deploying the extendable platforms and access ladder and opening the doors allows user to access all stored material without removing the FPU container from the transport system. The FPU containers should be securely linked together using horizontal inter-connectors or bridge locks and there is no need to remove them.

4.3.2 **ISO Twist Locks/Tie-downs.** There are four locking assemblies (1) with pins (2) to physically lock the FPU containers to the trailer floor through each ISO block at each container corner. **See Figure 4.3-1**

4.3.3 The four ISO Twist Locks (1) have a spring-loaded key (3) and a fixed key (4) that fits the keyway (5) in the floor of the FPU-TS, when rotated provide a firm locking device for the ISO Corner Blocks. **See Figure 4.3-1**

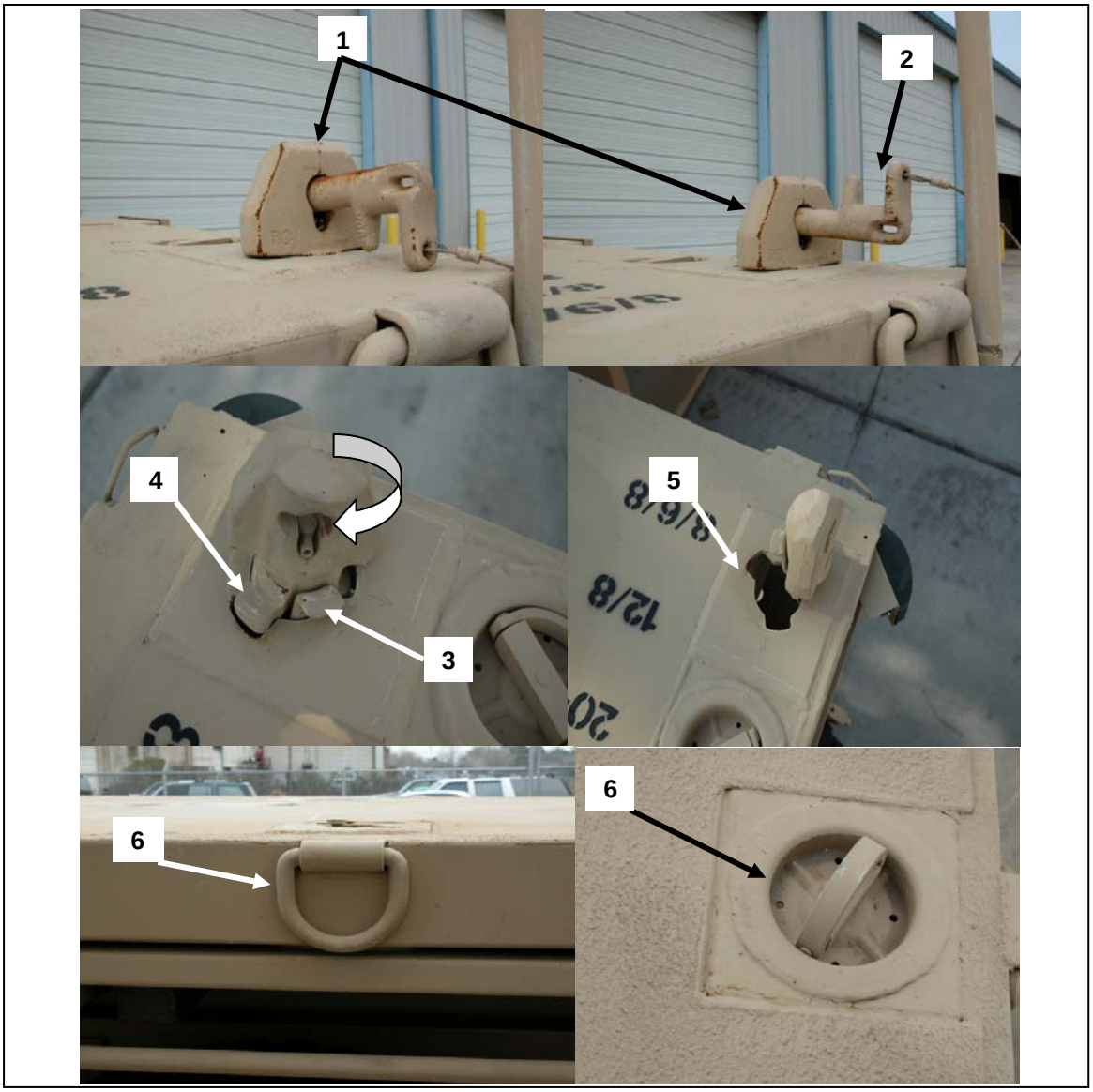
4.3.4 Containers or cargo can also be chained down by means of additional side mounted rings (6). **See Figure 4.3-1**

4.3.5 There are also Recessed tie-down rings (7) that lay flush with the floor and may be used to tie down palletized material limited to 6,000 lbs. **See Figure 4.3-1**

CAUTION

Do not over tighten tie-downs enough to damage any material during transportation. Palletized material secured to the recessed tie-down (5) rings has a working load-limit of 2,000 lbs per location and a Maximum Capacity of 6,000 lbs.

Figure 4.3-1
ISO Twist Locks/Tie-downs (FPU-TS)



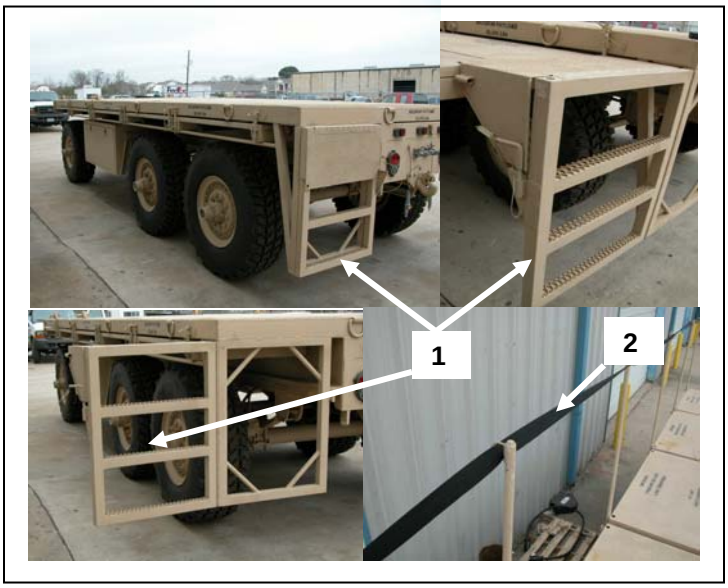
4.4 Transport System Access Ladder

WARNING

Fall hazards that may result in injury or death exist when climbing onto, returning from or working from the top of the transport system. Always maintain three points of contact with the retractable transport system ladder (1). Deploy the upright poles and safety straps (2) provided when using the access work area platforms of the transport system. See Figure 4.4-1

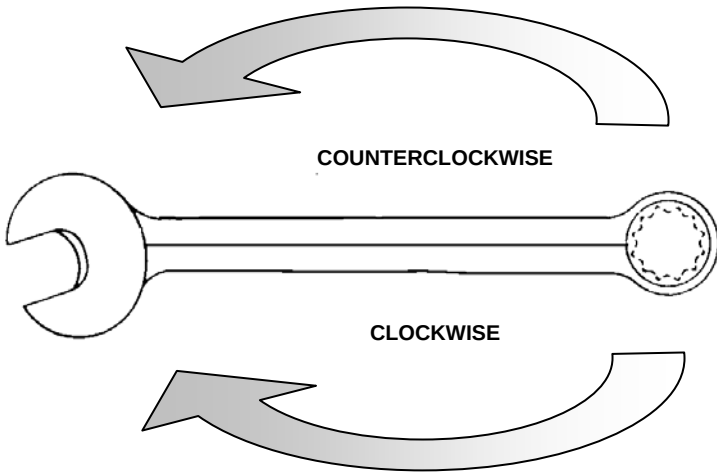
4.4.1 The FPU-TS is accessible from the rear of the transport system via a ladder (1) that is secured by pins and swings into place to mate with the working area platforms, and accepts the safe work area border poles and straps (2). **See Figure 4.4-1**

Figure 4.4-1
Retractable Ladder (FPU-TS)



4.5 Connecting Bridge Locks for a FPU-8 to BOH-CARGO-6 to FPU-8 Combination of Containers

NOTE: Four people with tools identified in the following processes as contained in the General Mechanics Tool Kit, are required.



NOTE: All hardware, bolts, jam nuts, and screws are loosened with a counterclockwise rotation. All hardware, bolts, jam nuts, and screws are tightened with a clockwise rotation with the exception of the wheel lug nuts. **Review Section 4.11**

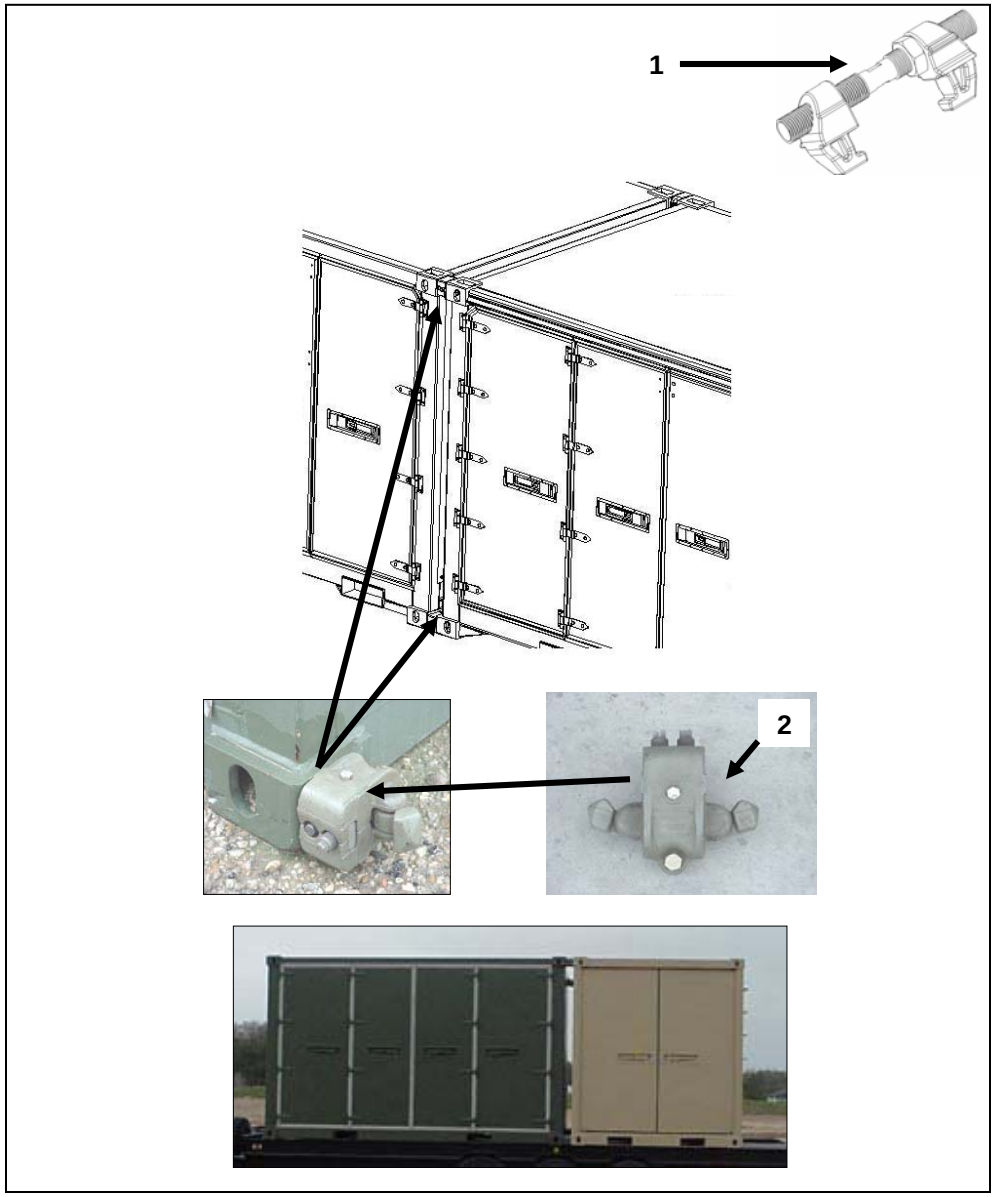
NOTE: The Bridge Locks (1) are only used with a FPU-8-2 BOH-CARGO-6 and a FPU-8-2 container combination. No Horizontal Inter-Connectors (2) are to be used on this container combination. **See Fig. 4.5-1**

WARNING

When using the folding steps of a FPU container to access the roof of a loaded FPU container, consult the FIELD PACK-UP & BOH CARGO SYSTEMS USER MANUAL for details on operation of cargo containers. All movement should be in the forward direction. Never move, step, or walk backwards when working on top of the system. A fall can occur if the worker loses concentration and steps backwards off of the edge. Stand erect only if necessary and only away from the edge. Working from a kneeling position helps reduce the threat of a fall.

NOTE: Consult the FIELD PACKUP UNITS & BOH CARGO SYSTEMS USER MANUAL for details on operation of and loading procedures of all FPU Cargo Containers.

Figure 4.5-1
Bridge Lock and Tandem Interlocking Containers



4.5.1 Using a 10K forklift, place one of the FPU-8-2 containers at one end of the trailer aligning the corner blocks over the ISO twist locks. **See figure 4.3-1**

4.5.2 Insert the retaining pins in the ISO twist locks. **See figure 4.3-1**

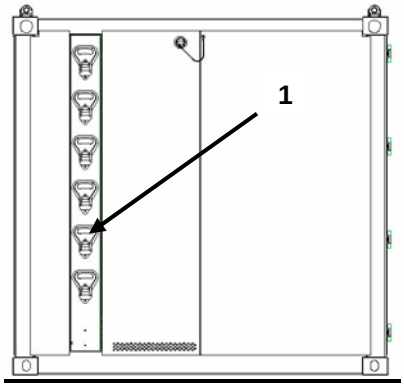
4.5.3 Using the 10K forklift place the Boh-Cargo-6 on the trailer tightly next to and alighed with the corner blocks of the FPU-8-2.

4.5.4 Using the 10K forklift, place the last FPU-8-2 on the trailer tightly next to the Boh-Cargo-6 and aligned over the ISO twist locks at that end of the trailer. **See Figure 4.3-1**

4.5.5 Insert the retaining pins on the ISO twist locks. **See figure 4.3-1**

4.5.6 Access the roof via the roof access system located on the end of the FPU container to install or remove the bridge lock connectors as follows: **See Figure 4.5-2**

Figure 4.5-2
Roof Access System



WARNING

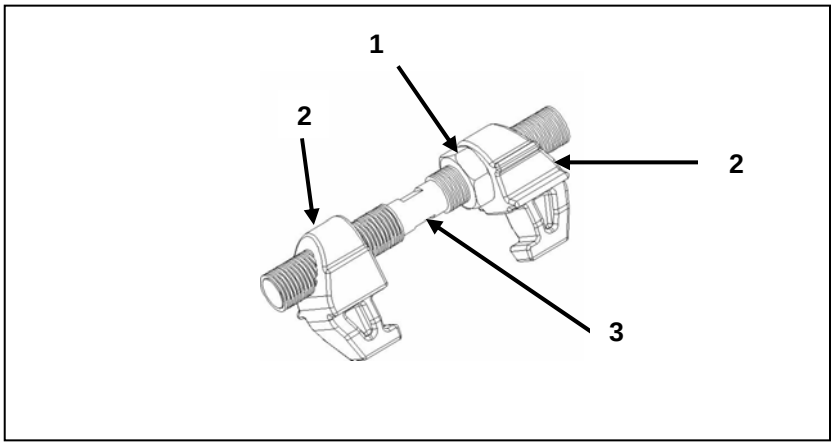
Fall hazards that may result in injury or death exist when climbing onto, returning from or working from the top of the container. Always maintain three points of contact with the folding steps (1) and roof when climbing onto the container. All movement should be in the forward direction. Never move, step, or walk backwards when working on top of the system. A fall can occur if the worker loses concentration and steps backwards off of the edge. Stand erect only if necessary and only away from the edge. Working from a kneeling position helps reduce the threat of a fall.

4.5.7 With the containers properly aligned and pushed together, access the roof via the system located on the end of the FPU container. **See Figure 4.5-2**

4.5.8 In a kneeling position, turn the bridge lock jam nut (1) away from closest jaw to loosen. **See Fig. 4.5-3**

4.5.9 Loosen jaws (2) by turning the Adjuster Flat (3) away from the operator until the bridge lock can be properly inserted into the corner blocks. **See Fig. 4.5-4**

Figure 4.5-3
Bridge Lock



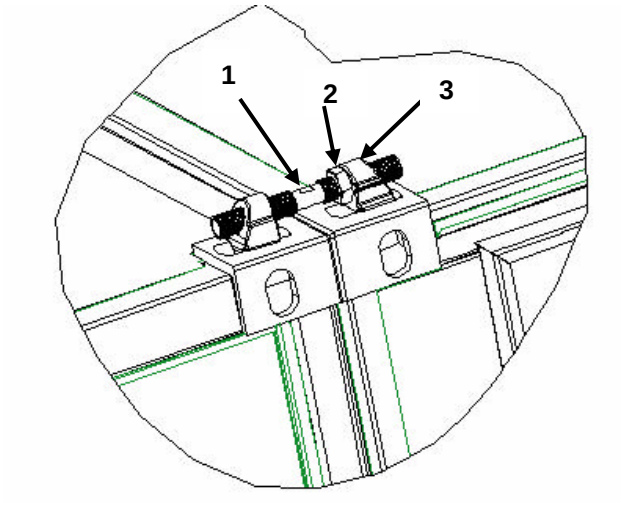
4.5.10 When the bridge lock Jaws fit into the ISO Block opening, adjust and tighten the jaws with the adjuster flat (1) with the adjustable wench until the bridge lock is secure. **See Figure 4.5-4**

4.5.11 Secure the jam nut (2) against the jaw (3) to prevent loosening of the bridge lock from vibration. **See Figure 4.5-4**

4.5.12 Repeat the process for this process for the three remaining corner block positions**.**

4.4.13 Using procedures identified in paragraphs 4.5.9 through 4.5.11 connect bridge locks to the four bottom corner block positions.

Figure 4.5-4
Bridge Lock Installed



4.6 Connecting FPU-8-2 and BOH CARGO 12-1 Combination with Horizontal Inter-Connectors

NOTE: Horizontal Inter-Connectors are only required with a FPU-8-2 and BOH-CARGO-12 combination; bridge locks are not required on this combination.

4.6.1 With the center nut head facing upward align the Horizontal Connectors with one of the corner blocks on the BOH-Cargo-12. **(See figure 4.5-1)** Using a 9/16-inch hex socket, 2 ½-inch long extension and ½-square drive flex head wrench, tighten the adjuster bolt closest to the boh-Cargo-12. **See figure 4.6-1**

4.6.2 Repeat this process for the remaining three corner block positions on the Boh-Cargo-12.

4.6.3 Completely retract the adjuster bolts on the Horizontal Connectors on the opposite side and away from the Boh-Cargo-12. This will open the tab to allow the FPU-8-2 corner blocks to be mated with the connectors.

4.6.4 With the FPU containers on the ground, aligned and pushed together, use a forklift with wood to protect against damage.

4.6.5 Access the roof via the roof access system located on the end of the FPU and using a 9/16-inch hex socket, 2 ½-inch long extension and ½-square drive flex head wrench tighten the adjuster bolts closest to the FPU-8-2 Horizontal Inter-Connectors (2) as follows: **See Fig. 4.6-1**

4.6.2 Repeat this process on the remaining horizontal connectors. Continue to check and tighten all adjuster bolts on the Horizontal Inter-Connectors until completely tight. It may take several tightening sequences before Horizontal Connectors are completely tight.

Figure 4.6-1
Horizontal Inter-Connector

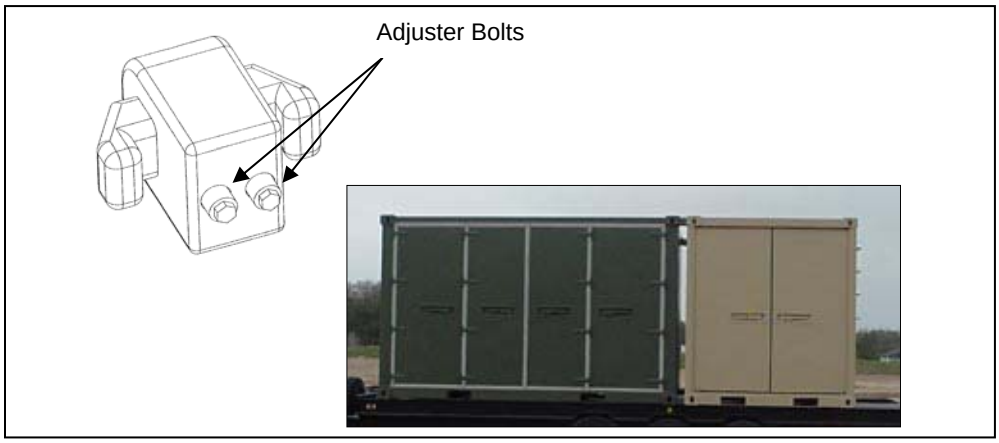
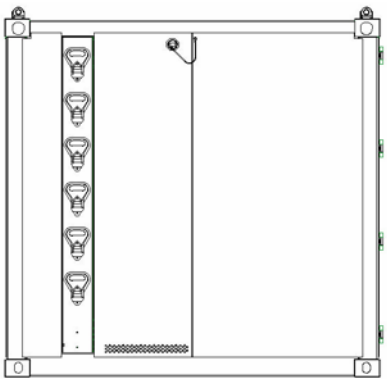


Figure 4.6-2
FPU Retractable Steps



WARNING

Fall hazards that may result in injury or death exist when climbing onto, returning from or working from the top of the container. Always maintain three points of contact with the folding steps (1) and roof when climbing onto the container. All

movement should be in the forward direction. Never move, step, or walk backwards when working on top of the system. A fall can occur if the worker loses concentration and steps backwards off of the edge. Stand erect only if necessary and only away from the edge. Working from a kneeling position helps reduce the threat of a fall.

WARNING

Ensure that the air brakes have been locked by bleeding the air pressure via the bleeder valves at the rear of the transport system.

4.7 Deploying the Retractable Platforms

WARNING

Ensure that the air brakes have been locked by bleeding the air pressure via the bleeder valves at the rear of the transport system.

WARNING

The FPU-TS platforms should be deployed when the transport system is on a level surface and periodically checked for shifting from a level position. Use care and seek assistance when deploying the retractable platforms as physical injury may occur. To maintain control, consider the ground surface conditions for adequate traction, such as mud, snow, ice and sand, and seek assistance from another person to prevent impact or strain injury. This operation will require two personnel to perform the platform deployment.

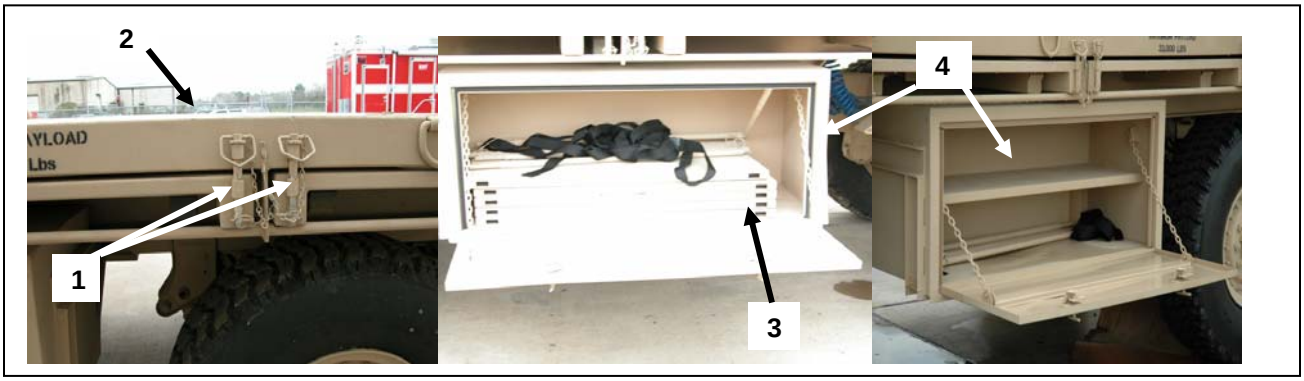
WARNING

The retractable platforms are of considerable weight and mass. This creates a possible pinch point when deploying or returning them to their storage position. Gloves should be worn to protect you from pinches and abrasions from the rough surface of the platforms.

4.7.1 Pull out all locking pins (1) street and/or curb side of the transport system and place them on the floor of the transport system (2) so they will be out of the way when deploying the retractable platforms.
See Figure 4.7-1

4.7.2 Unlock the box and remove all the platforms (3), upright poles and safety straps, with assistance of another person, from the box container (4), under the transport system, prior to continuing with the platform deployment. **See Figure 4.7-1**

Figure 4.7-1
Retractable Platform Operation



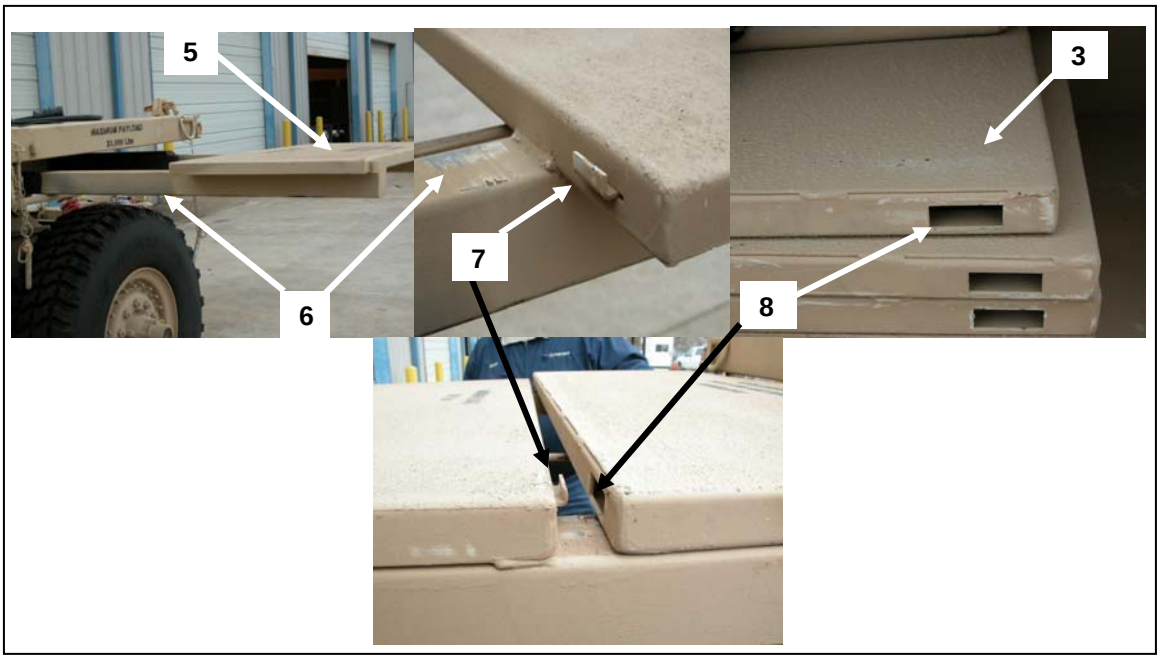
4.7.3 At the forward most platform, street or curb side, using both hands grasp the retractable platform (5) edge and pull out the first platform as you would a drawer until it is fully extended.
See Figure 4.7-2

WARNING

Falling platforms or moving ladders may result in serious injury. All platforms and ladders are provided with pins to secure them in place. DO NOT operate any ladder or platform without securing it with pins. Personnel should never work under extended platforms.

4.7.4 When placing the platform (3) on the extended platform (5), insure that you make contact with both rails (6) to prevent the platform (3) from falling through the frame and injuring personnel. **See Figure 4.7-2**

Figure 4.7-2
Retractable Platform Operation

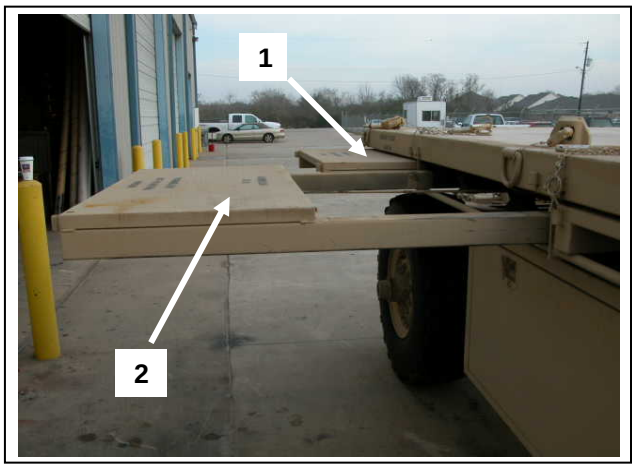


4.7.5 With the assistance of another person, select one of the platforms (3) that have been removed from the storage box. With a person on each side of the extended platform, place the selected platform on the extended platform frame (6) and engage the lock tabs (7) in the slots (8) provided in the platform (3). **See Figure 4.7-2**

4.7.6 Push the first extended platform (1) back in until it goes in no further, so the second extended platform (2) can be accessed and loaded by a person on each side. **See Figure 4.7-3.**

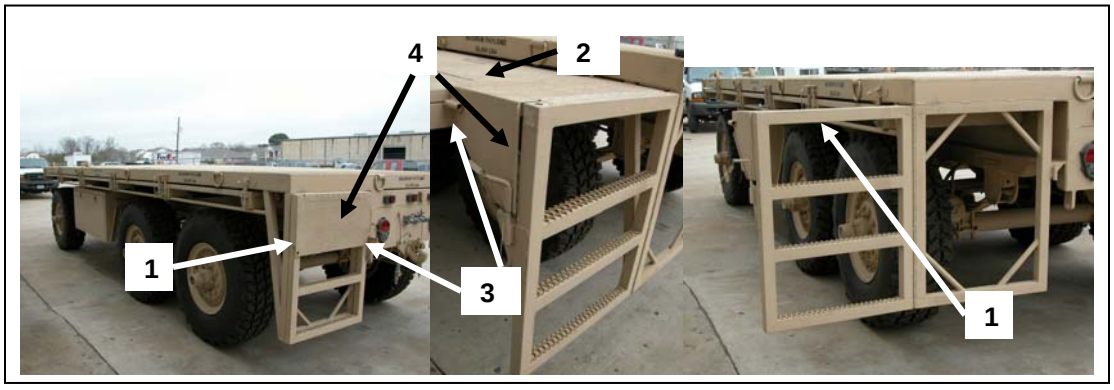
4.7.7 At this point each platform (3) **See Figure 4.7-3** can be installed working from front to rear of the transport system using the same procedure as described in **Para. 4.7.3 and 4.7.4.**

Figure 4.7-3
Retractable Platform Operation Step 3



4.7.8 After all the platforms have been deployed, the access ladder (1) can be unpinned, swung out to mate with the platform edge (2) and secured. The ladder has the same style and type of securing pins (3) as the platforms; those pins will be used to securely lock the ladder in place. The ladder has a hinged flap (4) that provides the pin securing holes and an overlap of the platform. **See Figure 4.7-4**

Figure 4.7-4
Retractable Platform Access Ladder



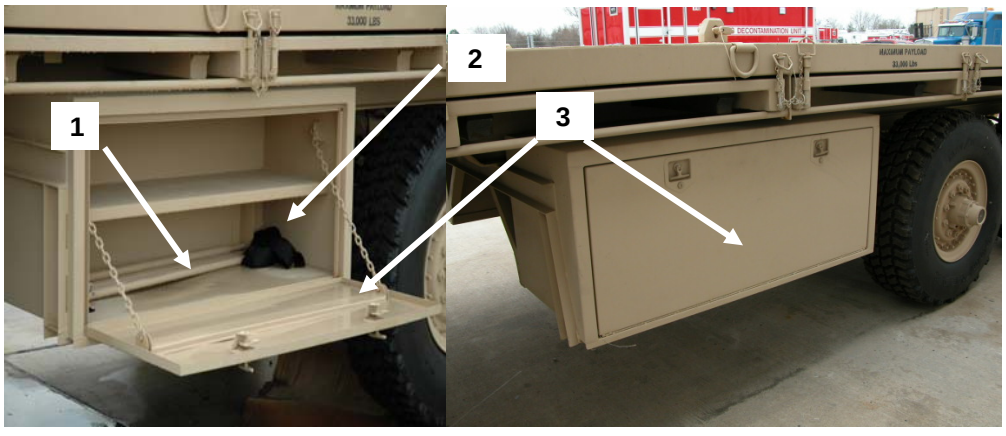
4.8 The Safety Work Area Platform Set-Up

WARNING

Falls, injury or death may occur. Do not attempt to work from any deployed platforms without first installing the Safe Work Area Border poles (1) and straps (2). See Figure 4.8-1

4.8.1 The Safe Work Area Border poles (1) and straps (2) are stored among the platforms in the platform equipment boxes (3) on the street side and curbside of the FPU-TS.
See Figure 4.8-1 and 4.8-2

Figure 4.8-1
Safe Work Area Poles and Border Straps



WARNING

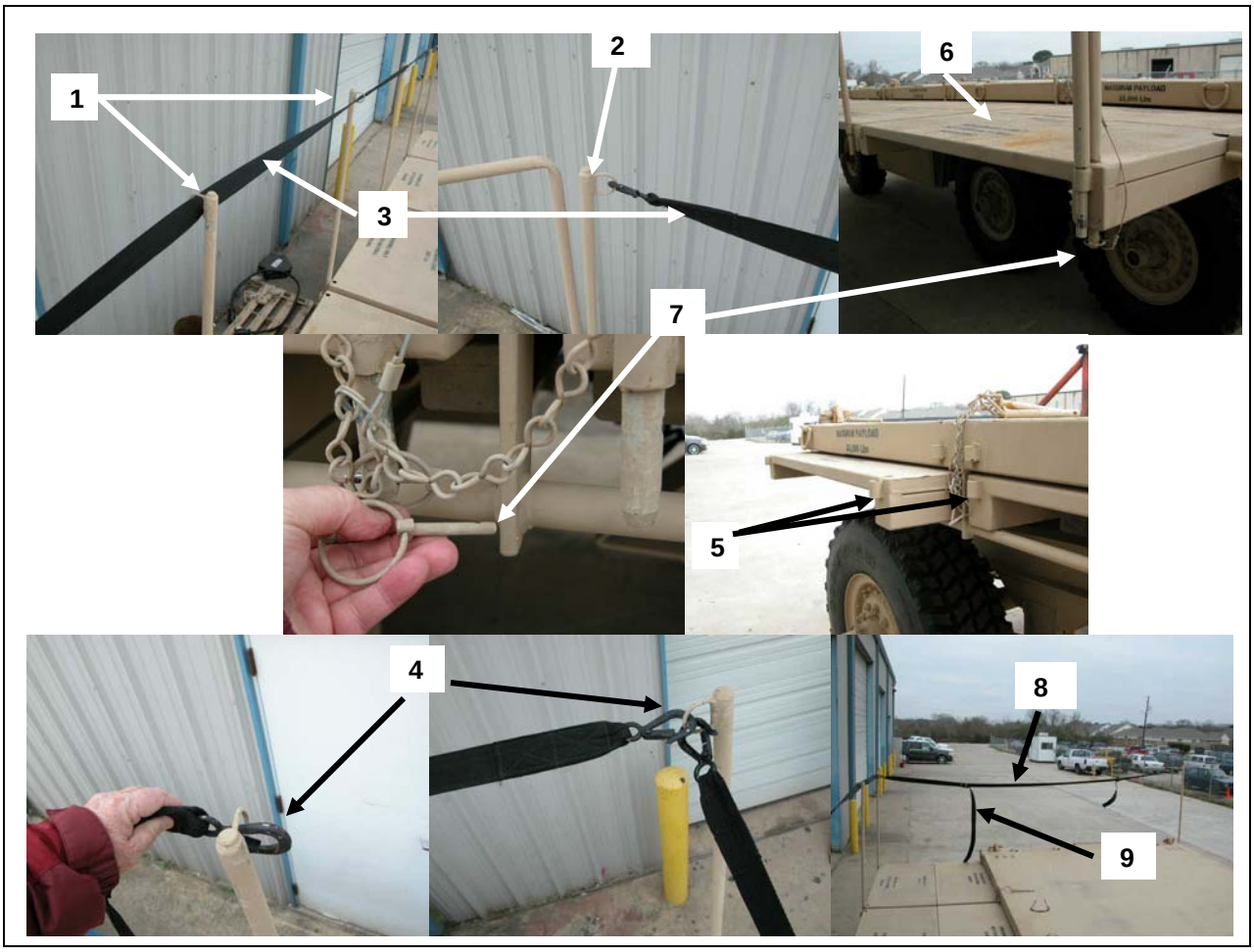
Seek assistance when retrieving and storing materials in the storage boxes.

4.8.2 Each border pole (1) is provided with an eye (2) designed to accept a black fabric safety border strap (3) and allow the hook snaps (4) to pass through to extend straps (3) from the front to the rear of the FPU-TS on both the curb and street side. Each pole (1) has a hole also at the bottom end that fits through a tube (5) that is welded to each platform (6) with a hole to accept a locking linchpin (7). This provides secure upright poles (1) to retain the black fabric safety border strap (3). The black fabric safety border strap (3) also extends across the front of the FPU-TS and has hook snaps (4) to provide a safety border for the front work area (8) and is adjusted by a buckle and strap (9). **See Figure 4.8-2**

WARNING

Falls, injury or death may occur. Do not attempt to work from any deployed platforms prior to first installing the Safe Work Area Border poles (1) and straps (2). See Figure 4.8-2

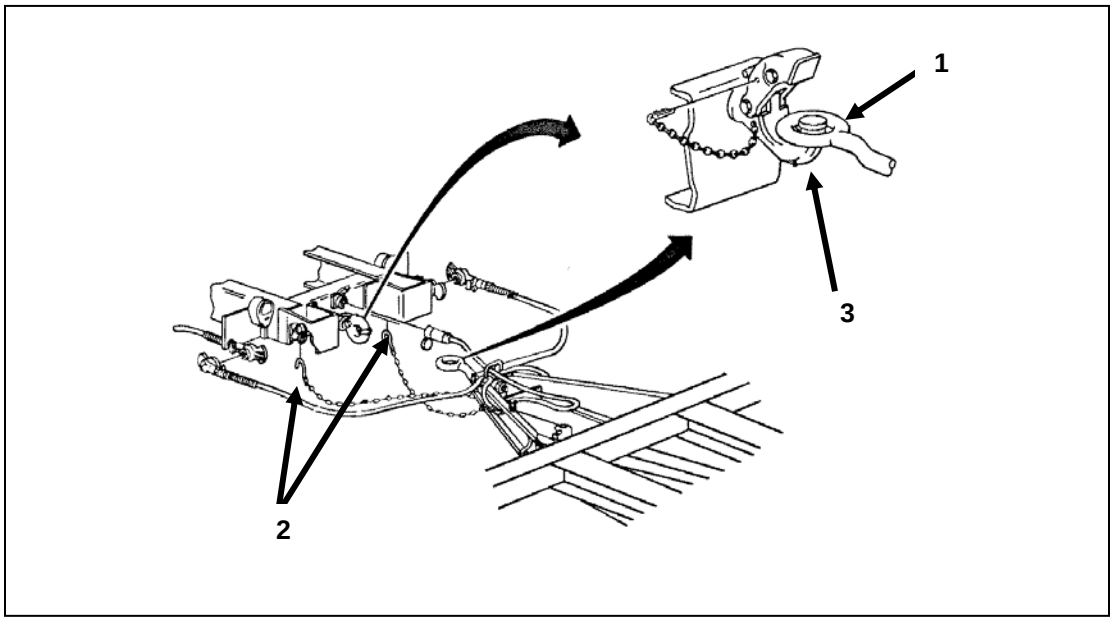
Figure 4.8-2
Border Poles and Safety Straps



4.9 Pintle Hook and Lunette Eye

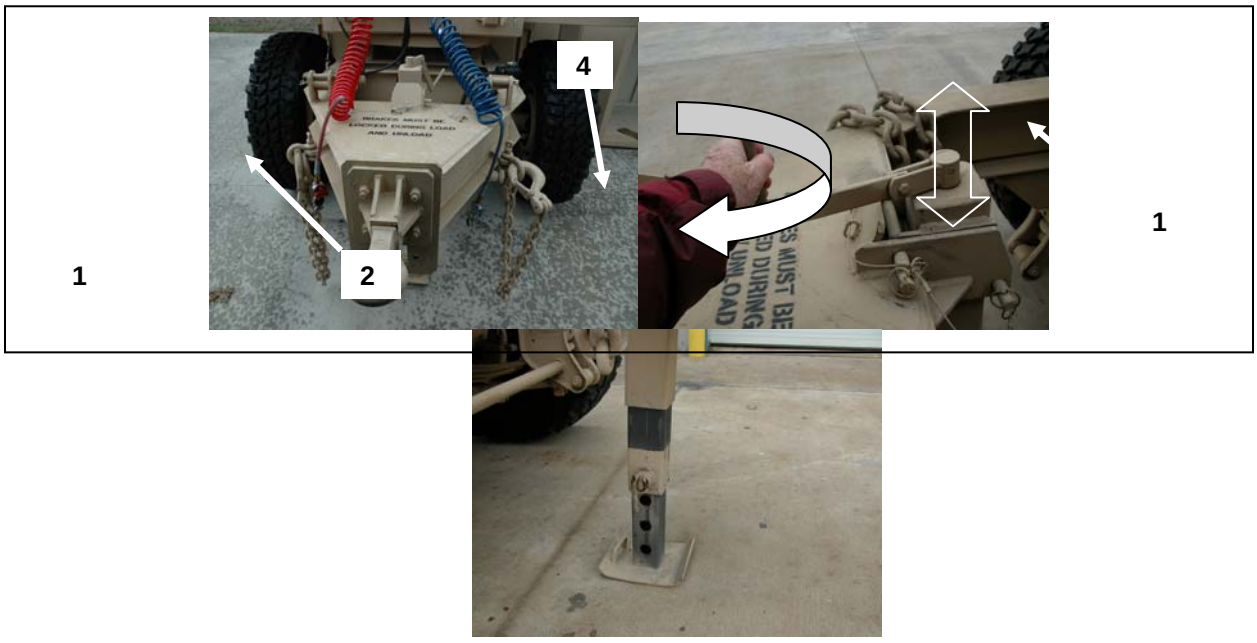
4.9.1 The FPU-TS is provided with a front towing Lunette Eye (1), trailer safety chains and hooks (2) and a rear mounted Tow Pintle (3) for the connection of additional transport systems. **See Figure 4.9-1**

Figure 4.9-1
Lunette Eye and Tow Pentle



4.9.2 The Lunette Eye is engaged and disengaged by means of a leveling jack (1) in the center of the transport system's front tow frame (2). The jack (3) has a handle (4) that, when rotated clockwise, lowers the frame and lunette eye onto the pintle hook; when rotated counterclockwise, it elevates the frame and lunette eye to disengage the pintle hook. **See Figures 4.9.1 and 4.9-2**

Figure 4.9-2
Leveling Jack



4.10 Transport System Air Brakes

CAUTION

Do not attempt to drill into the transport system frame or chassis as the air brake and electrical cables are routed through the chassis. This may result in rendering them inoperable.

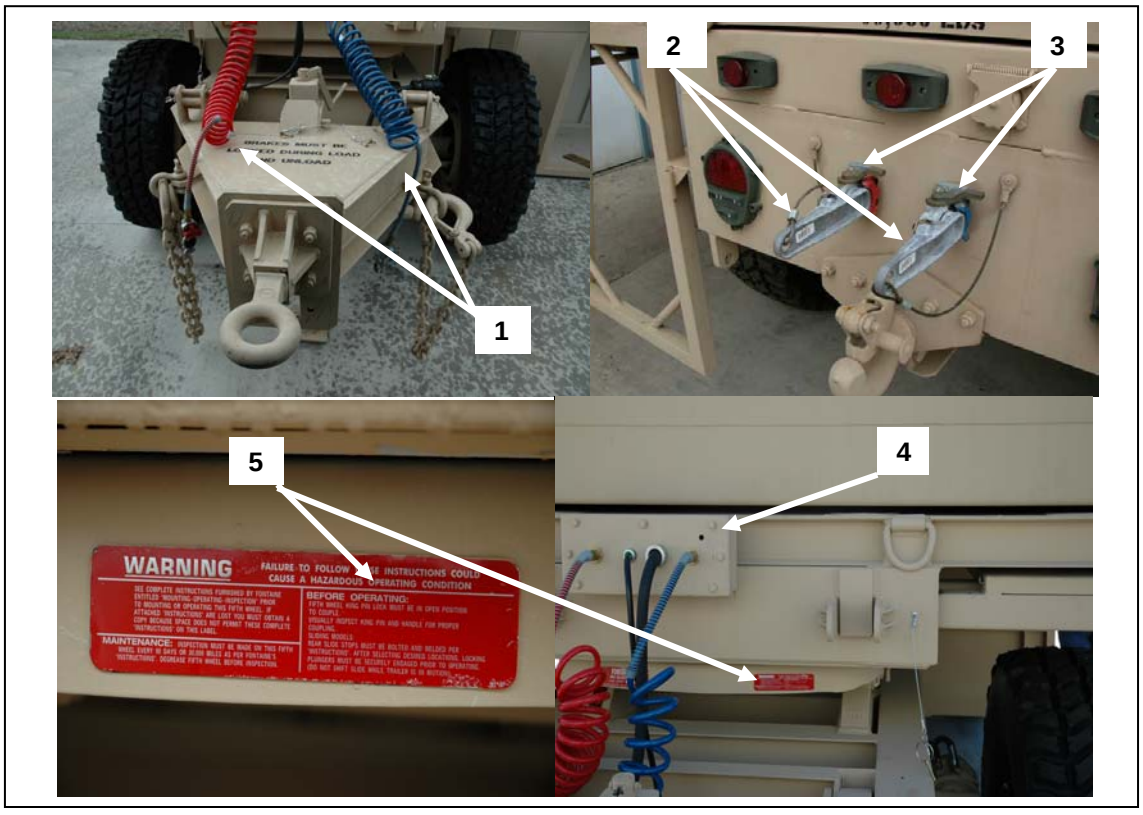
4.10.1 The FPU Transport System is provided with standard trucking industry (red and blue) coiled hoses (1) with quick disconnect type Glad Hand air brake connections for the front of the transport system. There are two Glad Hand weather caps (2) and connections with air shut-off valves (3) mounted in the rear of the transport system for additional hook-ups. **See Fig.4.10-1**

4.10.2 A red operational warning light for air brake connection verification, that flashes three times, indicates that the air brakes are fully charged and disengaged. **See Fig. 4.10-1**

4.10.3 The red light viewing hole (4) is located on the right side of the box that houses the front electrical and air hoses. **See Fig. 4.10-1**

4.10.4 Review the **red safety tag** (5) on the right side of the chassis just below the Blue hose connection for Fifth Wheel operation. **See Fig. 4.10-1**

Figure 4.10-1
Air Brake Connections



See Fontaine Fifth Wheel Web Technical Information Section V Table 5.3-1

CAUTION

If the Red light (4) stays on continuously it indicates a problem with the air charge. Do not attempt to tow the transport system; have a technician check for air leaks.

4.11 Tires and wheels

4.11.1 FPU-TS tires are 5-Ply, steel cord, Goodyear MV/T 395/85 R20, load Range "G".

CAUTION

Maintain proper air pressure (written in raised letters on the side wall of the tire) prior to movement or loading of the FPU-TS.

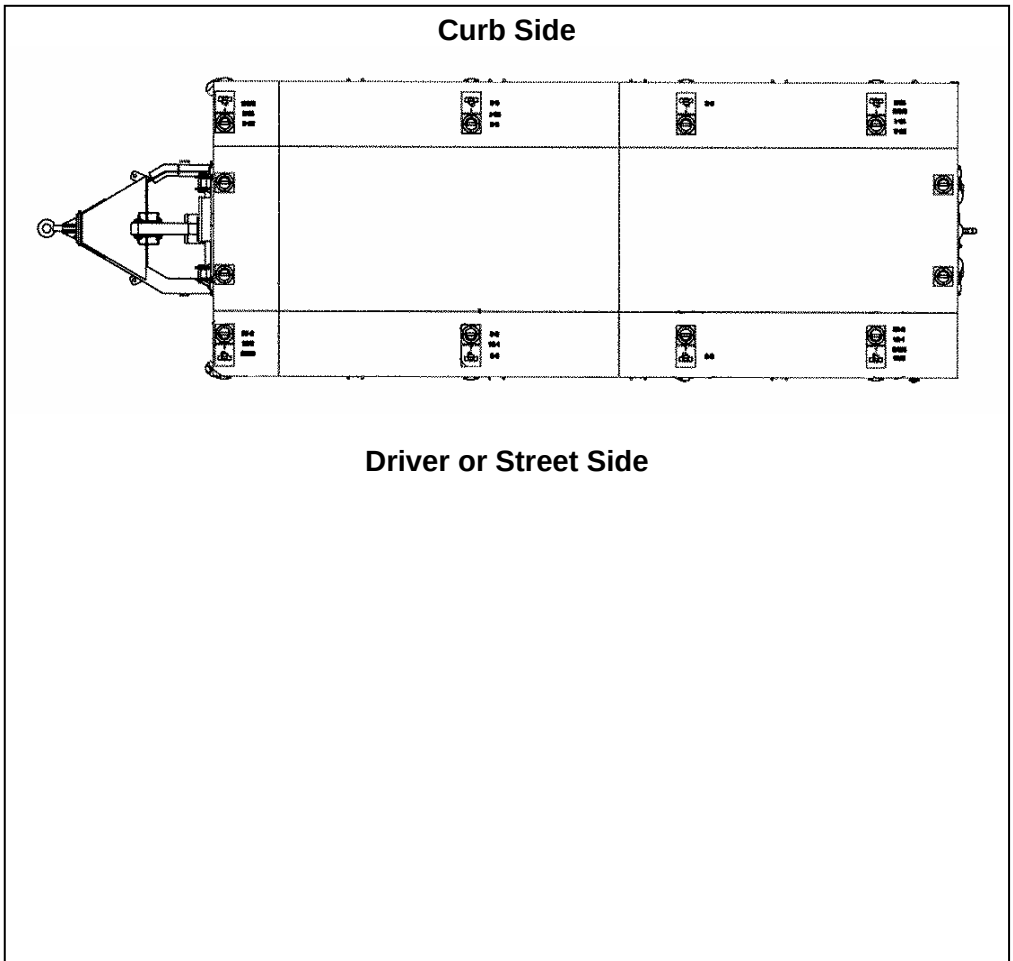
4.11.2 The FPU-TS tires are specifically selected for the transport system and are not to be used on the FMTV vehicles.

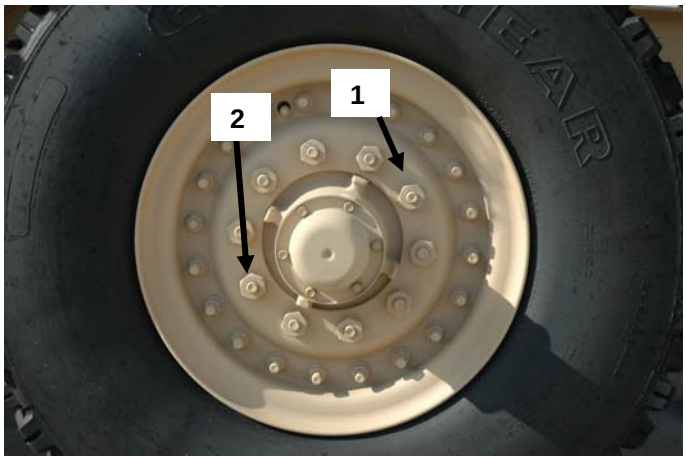
4.11.3 Wheel lug nuts (1) are tightened in the same direction as the wheel rolling forward. On the Driver's side you turn counterclockwise to tighten the lug nut. The ends of the studs (2) are labeled with an L for left (tighten) or an R (tighten) for right. **See Fig. 4.11-1**

4.11.4 The wheel lug nuts (1) are trucking industry standard and are of left hand thread rotation (counter clockwise rotation to tighten, clockwise to loosen) on the **Driver Side** or **Street Side** of the FPU-TS. **See Fig. 4.11-1**

4.11.5 The wheel lug nuts (1) on the **Curb Side** are of right hand thread rotation (clockwise rotation to tighten, counterclockwise to loosen). **See Fig. 4.11-1**

Figure 4.11-1
Wheel & Lug Nut Arrangement





THIS PAGE INTENTIONALLY LEFT BLANK

SECTION V
FPU TRANSPORT SYSTEM (FPU-TS) MAINTENANCE GUIDE

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION V
FPU TRANSPORT SYSTEM (FPU-TS) MAINTENANCE GUIDE

Review the Safety Summary on pages iv through vii prior to any MHE Movement, Service or Operation of the FPU Transport System.

5.1 Cleaning, Lubrication and Preventative Maintenance Checks and Services (PMCS)

5.1.1 **Cleaning.** Cleaning is performed after an operational event and periodically if stored/ staged outside to insure the containers, modules and accessories will perform as designed. Cleaning also assists in the performance of maintenance and insures the good operating condition of the FPU-TS.
See Figure 5.1-1

Table 5.1-1
Cleaning Procedures

SURFACE	OIL/GREASE	SALT/MUD/DIRT/ DEBRIS	RUST/CORROSION
Exterior and Interior Surfaces (All)	Detergent, Water, Rags	Soapy Water, Brush, Rags	Corrosion Removal Compound and Wire Brush, Dry Rag, Coat with Lube Oil or Spot Paint
Fabric Safety Straps	Detergent, Water, Rags	Soapy Water, Brush	N/A
Storage Box Seals and Gaskets	Damp and Dry Rags	Damp and Dry Rags	N/A
FPU-TS Floor, Tow , Lunette Eye	Detergent, Water, Rags	Soapy Water, Brush, Rags	Corrosion Removal Compound and Wire Brush, Dry Rag, Coat with Lube Oil or Spot Paint
Ladder and Door Hinges, Platform Glides and Rails, Glide Out Tracks	N/A	Brush, Rag and lubricate as needed to ensure rails travel freely	Corrosion Removal Compound and Wire Brush, Dry Rag and Lubricate as needed
Generators, ECU and other Accessories	See the operator's manual for each piece of equipment	See the operator's manual for each piece of equipment	See the operator's manual for each piece of equipment

5.1.2 Lubrication. Lubrication is performed after cleaning, periodic events and prior to storage to insure good operation and prevention of corrosion of moving parts. **See Table 5.1-2**

Table 5.1-2
Lubrication Procedures

USAGE	FLUID LUBRICANT	CAPACITIES	EXPECTED TEMPERATURES	INTERVAL
Ladder Hinges, Pins, Floor Locking Mechanisms	OE/HDO	As Required	All Temperatures	Monthly or as Required if under Adverse Situations
Storage Box Door Locks, Hinges, Handles, Tow	Lubricating Oil, General Purpose Preservative	As Required	All Temperatures	Monthly or as Required if under Adverse Situations
Local Lube Points. Door, Platform tracks and rails	Dry Lubricant	As Required	All Temperatures	Monthly or as Required if under Adverse Situations

5.1.3 PMCS. Preventative Maintenance Checks and Services (PMCS) should be performed at the established periods in order to insure smooth and proper operation of the equipment in the system. **See Table 5.1-3**

Table 5.1-3
Preventive Maintenance Checks and Services (PMCS) for the FPU-TS

PMCS B (Before) D (During) A (After) W (Weekly) M (Monthly)

#	B	D	A	W	M	INSPECTION ITEM AND PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF
1	*	*	*			**Storage Box Doors, Walls, FPU-TS Ladder** Check all doors, walls and ladder steps for cracks, dents, holes, or loose/missing hardware.	Missing doors, punctures, damage that would cause hazard or injury.
					*	Lubricate hinges, locks and ladders as required.	
2			*	*		**Exterior** Check all exterior surfaces for cracks and dents that effect the operation of the FPU-TS. Check for accumulations of dirt, debris, ice, snow or salt. Clean as required. Check trailer floor for dirt and debris. Clean with broom or rags as required. Check FPU Lock down devices in FPU system floor for cracks or missing latches, pins and lanyards. Schedule cracked floor for repair. Check center FPU-TS floor lock downs devices for cracks or missing pins and lanyards. Check Ladder and Platforms for damaged or missing locking tabs and for missing or loose lock pins, linchpins and lanyards. Replace or tighten as necessary.	Damage that would cause malfunction of the FPU-TS working systems such as lock down devices would cause injury. Missing or damaged pins would cause injury by not securing the platforms, ladder, or safety upright poles for the safe border straps. Replace any missing or damaged pins.
3			*		*	**Data Plates** Check plates for legibility, damage and/or absence. Clean with water and rag. Replace as needed.	Missing data will impair maritime shipment.

5.2 Minor Repairs

Repairs, adjustment and replacement of parts can be accomplished with a General Mechanic's Tool set (NSN 5180-01-454-3787).

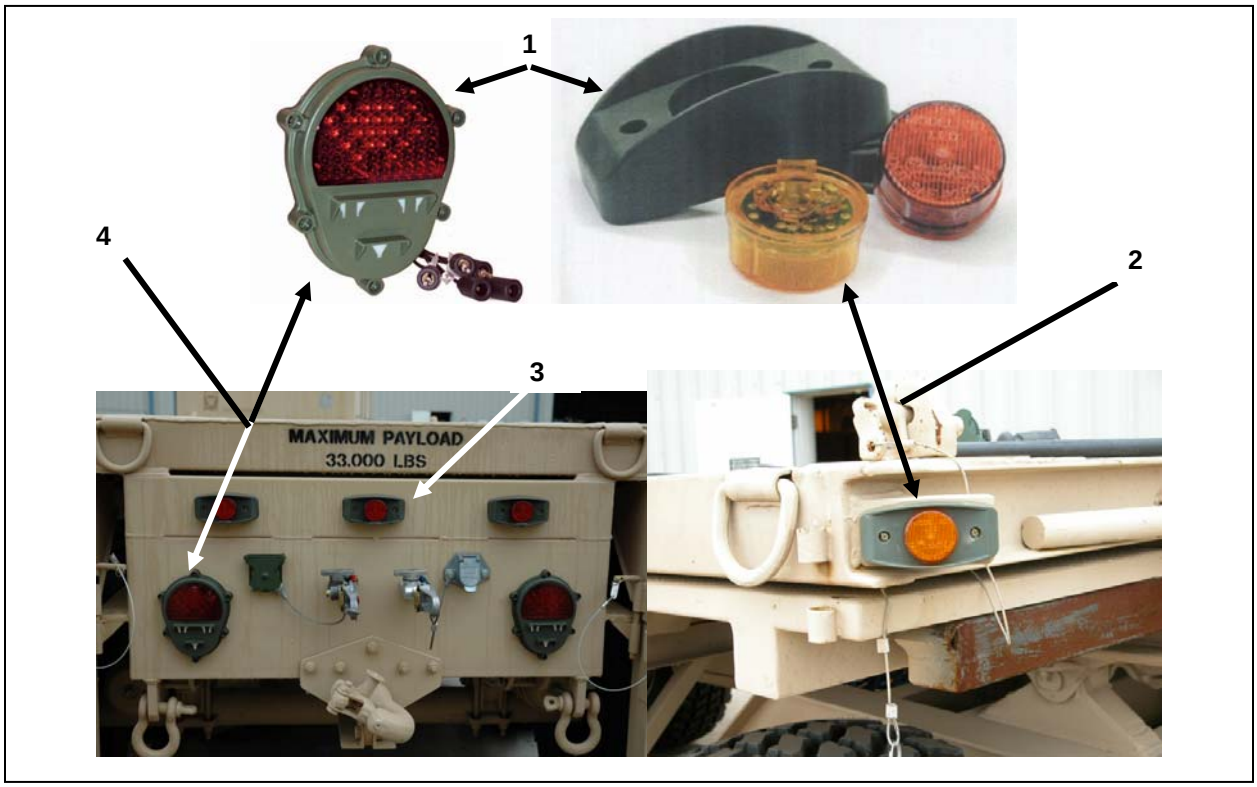
5.2.1 Retractable Platform Repair

5.2.1.1 Hammer out dents and replace dry lube as needed to insure smooth operation and a safe working platform.

5.2.2 FPU-TS System Running Light Replacement

5.2.2.1 The FPU-TS LED running and two LED brake lights (1) are LED military Composite. There are two amber LED lamps (2) on the front of the transport system, and three red LED lamps (3) on the rear just above the brake lights (4). **See Fig. 5.2-2**

Figure 5.2-2
Tail and Running lights



5.2.3 Air Brake Hose Placement

5.2.3.1 Replace cut or damaged air brake hoses and glad hand connections.

WARNING

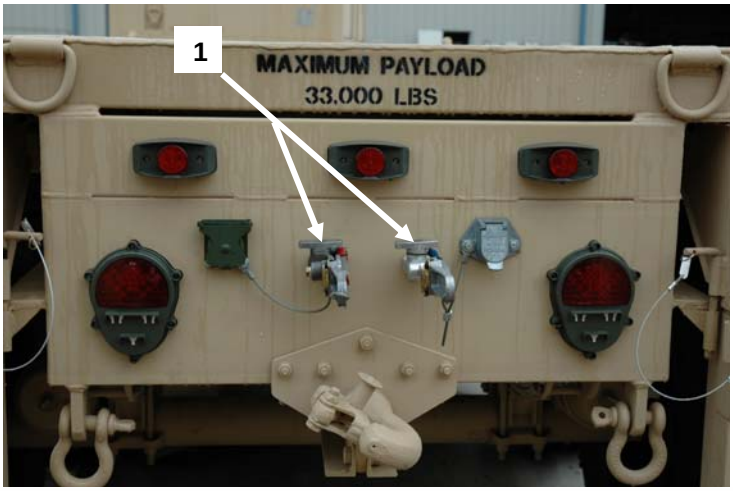
Insure that the system air pressure has been bled and both rear bleeder valves (1) are open.
Eye protection should be worn when working on a pneumatic system.
Unless you are a qualified Pneumatic brake systems technician, do not attempt to do maintenance.

Figure 5.2-3
BLUEDOT Air Brake Parts

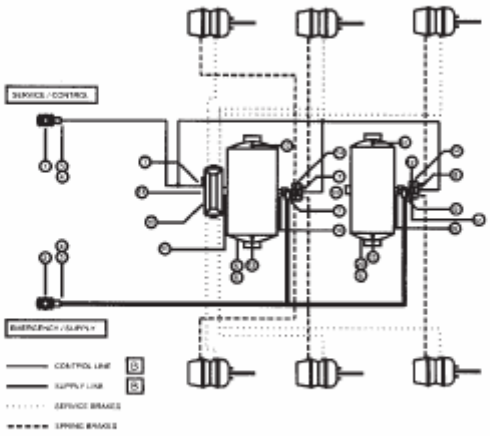
AIR HOSE FINISHED (Nylon)	
AH-50180-2	1/2" OD Coiled Set

AIR COMPONENTS	
78850	Glad Hand (Service) *BLUE*
78851	Glad Hand (Emergency) *RED*
5499	Bulk Head Fitting (3/8MP x 1/4FP)

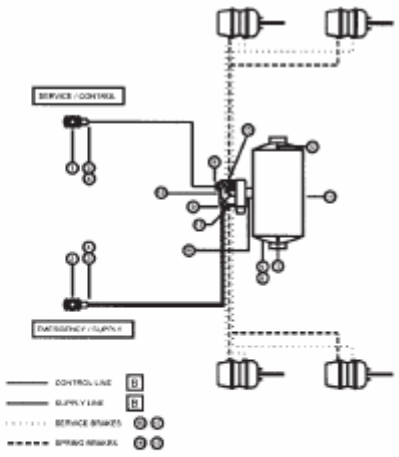
Figure 5.2-4
Air Brake Diagram



Typical Air Brake Systems w/ ABS



TA-7000 Series
Triple Axle



TA-8000 Series
Tandem Axle

5.3 Technical Information and Replacement Part Sources

Table 5.3-1
Technical and Replacement Part Information Sources

FUNCTION	TECH MANUAL & TITLE	MFG. WEB SITE / ADDRESS & PHONE NUMBER
AXLES REPAIR	MERITRO TRAILER AXELS REPAIR MANUAL #14	ARVIN MERITOR WWW.ARVINMERITOR.COM/TECHLIBRARY/DOCUMENTS/MM14.PDF
ABS BRAKES REPAIR	MERITOR WABCO TRAILER ABS ENHANCE EASY STOP WITH PLC MANTENANCE MANUAL MM -0180 ISSUED 05-01	ARVIN MERITOR WWW.ARVINMERITOR.COM/TECHLIBRARY/DOCUMENTS/MM0180.PDF
AIR BRAKE HOSE REPAIR AND REPLACEMENT	BLUEDOT TA-7000 & TA 8000 SERIES ABS BRAKE ACTUATING SYSTEM	BLUEDOT INC. http://www.bludotinc.com/pdf/air_brake_parts.pdf
FIFTH WHEEL	N/A	FONTAINE MFG. WWW.FIFTHWHEEL.COM/FFWHOME.HTML
TIRES REPLACEMENT	N/A	GOODYEAR TIRE WWW.GOODYEAR.COM
LED TAIL LIGHTS	TRUCK-LITE.COM	TRUCK-LITE www.truck-lite.com/webapp/wcs/stores/servlet/ProductDisplay?catalogId=10001&storeId=10001&productId=24204&langId=-1
LED RUNNING LIGHTS	TRUCK-LITE.COM	TRUCK-LITE www.truck-lite.com/webapp/wcs/stores/servlet/ProductDisplay?catalogId=10001&storeId=10001&productId=24205&langId=-1
BODY AND PLATFORM REPAIR & WELDING	TM9-237 Welding Theory and Application TM9-510 Metal Body Repair and Related Operation	TECH MANUALS & HANDBOOKS WWW.LOGSA.COM
BOH EQUIPMENT REPLACEMENT		BOH ENVIRONMENTAL, LLC WWW.BOHENVIRONMENTAL.COM

5.4 Troubleshooting

Review the Safety Summary prior to any MHE Movement, Service or Operation of the FPU System on pages iv through vii.

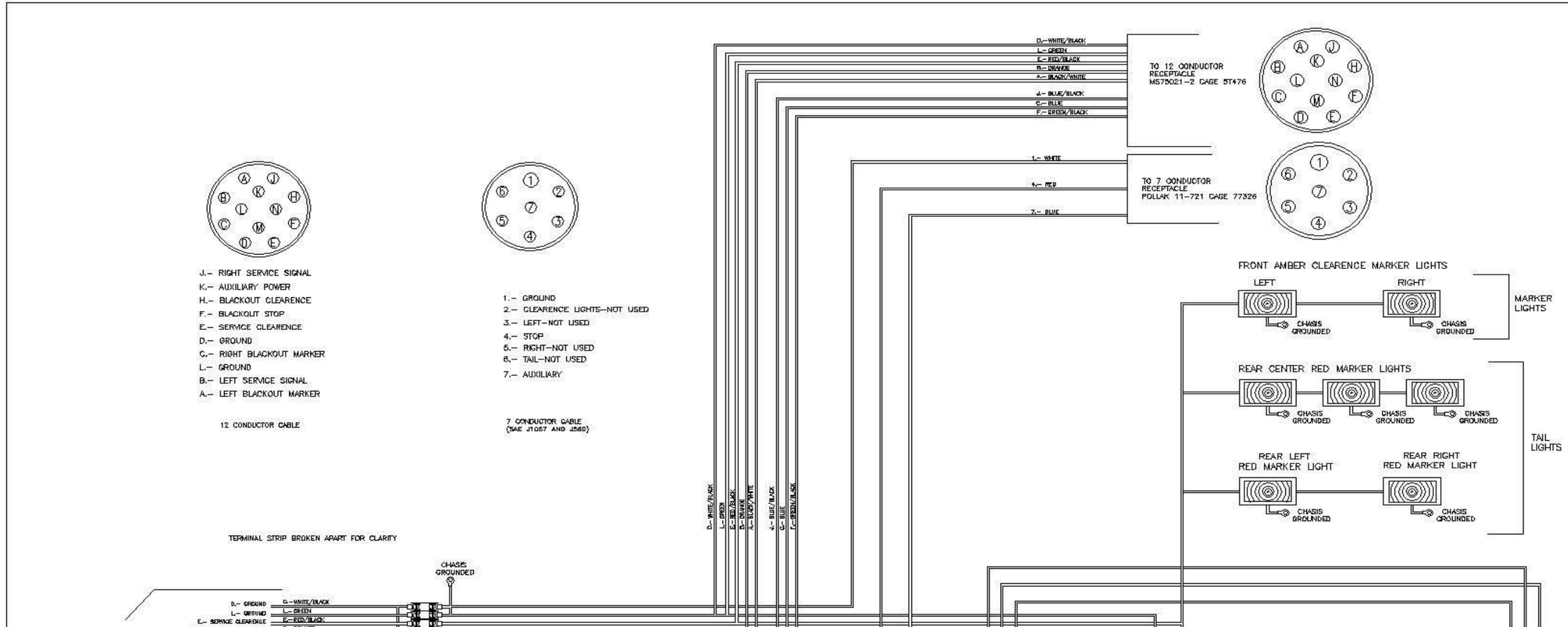
Table 5.4-1
Troubleshooting Checks

FUNCTION	CHECKS
FPU-TS System Operation Section 4.3	
FPU-TS System brakes not engaged	1. Insure the air brake bleeder valves are open. **See Figure 4.1-1.**
FPU-TS System brakes not disengaged, red verification light stays on	1. Check air brake bleeder valves. **See Figure 4.1-1.** 2. Have an air brake technician check for air leaks.
Lunette Eye will not engage Pintle for hook-up.	1. Insure the air brakes are engaged prior to loading the FPU-TS to keep the Pintle carriage from rotating upward due to the load. 2. Insure the FPU-TS System is on relatively level ground and all wheels are in firm contact with the ground. 3. Insure that the FPU-TS System ABS brakes are locked (air bleeder valves open) and the trailer is unable to roll when performing any operation. **See Figure 4.1-1.** 4. Insure the leveling jack makes firm contact with the ground and no debris interferes with the jack operation. 5. Insure the leveling jack is operable. **See Figure 4.9-2.** 6. Reposition the FPU-TS System and clear debris.
Platform will not extend or Ladder is binding	1. Insure the platform ladders have free and clear swing area for their operation curb and street side. Cleaning and lubrication may be necessary. **See Table 5.1-2 lubrication procedures.** 2. Insure that platforms have free and clear area for their operation curb and street side. Cleaning and lubrication may be necessary. **See Table 5.1-2 lubrication procedures.** 3. Rails on the retractable platforms use a dry lubricant to prevent collection of sand and dirt. **See Figure 4.7-1.**
No Electrical Power	1. Insure that the vehicle's external electrical power source or generator is properly connected and operating. 2. Insure both the lighting and ABS power connection cables make firm connection.

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION VI
FPU TRANSPORT SYSTEM (FPU-TS)
ELECTRICAL DIAGRAM

THIS PAGE INTENTIONALLY LEFT BLANK


J.– RIGHT SERVICE SIGNAL
K.– AUXILIARY POWER
H.– BLACKOUT CLEARENCE
F.– BLACKOUT STOP
E.– SERVICE CLEARENCE
D.– GROUND
C.– RIGHT BLACKOUT MARKER
L.– GROUND
B.– LEFT SERVICE SIGNAL
A.– LEFT BLACKOUT MARKER
12 CONDUCTOR CABLE
1.– GROUND
2.– CLEARENCE LIGHTS–NOT USED
3.– LEFT–NOT USED
4.– STOP
5.– RIGHT–NOT USED
6.– TAIL–NOT USED
7.– AUXILIARY
7 CONDUCTOR CABLE
(SAE J1057 AND J560)
D.– WHITE/BLACK
L.– GREEN
E.– RED/BLACK
B.– ORANGE
A.– BLACK/WHITE
J.– BLUE/BLACK
C.– BLUE
F.– GREEN/BLACK
TO 12 CONDUCTOR
RECEPTACLE
MS75021–2 CAGE 5T476
1.– WHITE
4.– RED
7.– BLUE
TO 7 CONDUCTOR
RECEPTACLE
POLLAK 11–721 CAGE 77326
FRONT AMBER CLEARENCE MARKER LIGHTS
LEFT
RIGHT
CHASIS GROUNDED
CHASIS GROUNDED
MARKER LIGHTS
REAR CENTER RED MARKER LIGHTS
CHASIS GROUNDED
CHASIS GROUNDED
CHASIS GROUNDED
REAR LEFT
RED MARKER LIGHT
REAR RIGHT
RED MARKER LIGHT
CHASIS GROUNDED
CHASIS GROUNDED
TAIL LIGHTS
TERMINAL STRIP BROKEN APART FOR CLARITY
CHASIS GROUNDED
D.– GROUND
L.– GROUND
E.– SERVICE CLEARENCE
D.– WHITE/BLACK
L.– GREEN
E.– RED/BLACK

6.1 FPU-TS Electrical System

6.1.1 The FPU-TS is provided with two cables for mating with DoD Mil Std connections from the towing vehicles to the electrical system of the transport system with matching connections provided at the rear of the transport system. **See Fig. 6.1-1**

6.1.2 One large twelve-conductor #12/12 cable (1) is used to furnish power to the brake and running lights. **See Fig. 6.1-1**

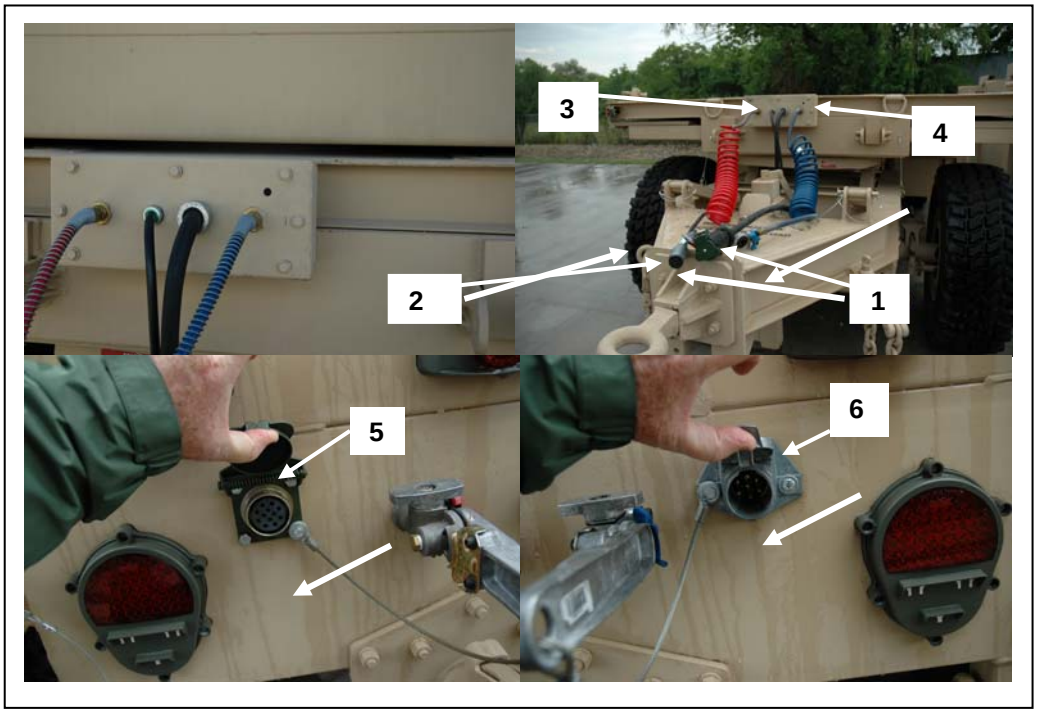
6.1.3 The other is a smaller seven-conductor #14/7 cable (2) used to connect power to the ABS brake system. **See Fig. 6.1-1**

6.1.4 The electrical box (3) on the front of the trailer with the two cables has a hole (4) on the right side that has a red internal light to validate the ABS air operation that flashes three times. **See Fig. 6.1-1**

CAUTION

Do not attempt to drill into the transport system frame or chassis as the air brake and electrical cables are routed through the chassis. This may result in rendering them inoperable.

Figure 6.1-1
FPU-TS Cables



THIS PAGE INTENTIONALLY LEFT BLANK

SECTION VII
FPU TRANSPORT SYSTEM PARTS LISTS

THIS PAGE INTENTIONALLY LEFT BLANK

VII FPU TRANSPORT SYSTEM PARTS LIST

7.1 Repair Parts List

Table 7.1-1

Repair Parts List FPU-TS (The BOH CAGE Code is 1NSG3)

PAGE	FIGURE (ITEM)	ITEM	(CAGE) / MFG.	PART NUMBER
42	6.1-1	Elect. Plug 12 conductor/w cap	(96906)	MS75020-1
42	6.1-1	Wire 12 conductor #12/12 SOOW 26 ft	COYLD	N/A
42	6.1-1	Elect. Receptacle 12 conductor/W cap	(96906)	MS75021-2
42	6.1-1	Elect. Plug 7 conductor	Pollack (77326)	11-721
42	6.1-1	Wire 7 conductor #14/7 26 ft SOOW	COYLD	N/A
36	5.2-2	Brake Light (LED)	Truck-Lite	07240
36	5.2-2	Running Light (LED)	Truck-Lite	07411
33	4.11-1	Tire Range G 5 PLY Steel	Goodyear	MV/T 395/85 R20
32	4.10-1	Glad Hand (red) & (blue) Set ½" OD	BLUEDOT Inc.	AH-50180-2
37	5.2-3	Air Hose Coiled (red)	BLUEDOT Inc.	78850
37	5.2-3	Air Hose Coiled (blue)	BLUEDOT Inc.	78851
37	5.2-3	Bulkhead Fittings set	BLUEDOT Inc.	5499
28	4.8-1 (2)	Safety Border Strap (long)	1NSG3	16321516
28	4.8-1 (2)	Safety Border Strap (Short)	1NSG3	16321517
27	4.7-2 (3)	Removable Platforms	1NSG3	16321523
23	4.5-3	Bridge Locks NSN 8145-01-523-4079	1NSG3	15150118
20	4.5-1 (2)	Horizontal Inter Connector NSN 8145-01-523-4120	65059	12900BA-1PZ
17	4.3-1 (1)	ISO Twist Lock (assembly)	1NSG3	15150106
30	4.8-2 (1)	Hand Rail Pole	1NSG3	16321515
30	N/A	Safety Travel Chain	1NSG3	74600111
30	N/A	Safety Hook	1NSG3	74080210
30	N/A	Safety Shackle	1NSG3	78870814

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION VIII
FPU TRANSPORT SYSTEM WARRANTY

THIS PAGE INTENTIONALLY LEFT BLANK

Boh Environmental, LLC

MANUFACTURER'S LIMITED WARRANTY TERMS

Boh Environmental, LLC (BOH) warrants that the Products, including the Field Pack-Up (FPU Systems) and other Containerized Mission Systems, it manufactures shall be free from defects in materials and workmanship for a period of one year from date of purchase when normally used and operated by the Customer. Unused Product containing missing or defective components shall be returned within the warranty period, with proof of purchase, to BOH with transportation charges prepaid. BOH, at its option, shall supply a replacement item(s) or refund the purchase price of the Product**.** BOH will determine, at its sole discretion, that the claim is a valid warranty item. If so, BOH will pay costs (actual transportation plus handling charge) for shipping of the replacement item, when this option is selected.

This warranty is void if Products have been damaged by the Customer as the result of improper or unreasonable use, or other causes not arising out of defects in material or workmanship. The warranty is also void if the Product has at any time been stored or used other than in accordance with the directions set out in the literature relating to the Product. BOH makes no other warranty or representation concerning the Products except that each will meet the performance specifications set forth in the literature relating to the Product. There are no further warranties, including any warranty of merchantability or fitness for a particular purpose covering the Product.

BOH will, at its option, either (1) credit user in the amount paid for any Product which does not perform to these specifications, or (2) replace such Product, provided user so notifies BOH within twelve (12) months of the Products purchase date. BOH shall not be responsible for any consequential damages to user arising as a result of such performance. The Customer will return the item at their cost, if required. BOH may elect to have its representative inspect the item to validate the claim.

Other product components included in the fabrication of items purchased under contract (e.g. air conditioners and generators) that are not manufactured by Boh Environmental are warranted by their individual manufacturer. Copies of such warranties are supplied with the finished Product or are available through Boh Environmental.

www.bohenvironmental.com
BOH Environmental, LLC
FPU Mobility Systems Division
4116C Walney Road
Chantilly, VA 20151
BOH FPU Systems
Telephone (703) 449-6020 / Fax (703) 449-6022